THE LANCET.

No. 4535. Vol. CLXXIX. LONDON, SATURDAY, JULY 30, 1910. Pp. 160.

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Presidential Address
ON
THE EVOLUTION OF THE BRITISH MEDICAL ASSOCIATION AND ITS WORK.

Delivered at the Seventy-eighth Annual Meeting of the British Medical Association

BY HENRY T. BUTLIN, D.C.L., LL.D.,
PRESIDENT OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

LADIES AND GENTLEMEN,—At almost every meeting of the Association the President may choose for the subject of his address anything in the heavens above, in the earth beneath, or in the waters that are under the earth. But this year the subject of the President's address is strictly prescribed by the circumstances of his election. You might have chosen a man far more distinguished in his profession, of greater fame, with title or riband, but you have deliberately taken in preference a less distinguished person for the sole reason that he has worked for the Association, and that you know that he has the interests of the Association at heart. You have, as it were, said to him: "Thou good and faithful servant, take thou the presidential chair." And the only way in which he can repay you for the honour you have done him is to speak of the Association, to tell what it has done in the past and what it now is, and, perhaps, what it may yet do. If it were not my duty it would be my pleasure to do this, for it is good now and again to look back into the past and ponder over the lessons which it teaches, and to see how and to what extent they can be applied to the present and the future; and it is also good in a great city like this, where there are foreign visitors and distinguished guests and special delegates from our branches oversea, to give them some idea of the work of their and our Association.

I. ANNUAL MEETINGS.

I could not, of course, give a history of the Association in this address; indeed, I would not if I could, for a large part of it would have no interest for many of my audience. But I would deal with certain features of the Association, and would illustrate them with word-pictures where that is possible. And, first, of the annual meetings, at which everyone knows there is a good deal of eating and drinking and giving of toasts, without which no civilised country seems able to conduct its business. But you shall soon see that the meetings are not for the sole purpose of feasting and junketing. For that purpose go back to the meeting at Plymouth nearly 40 years ago (1871), where the Address in Surgery is read by an English surgeon practising in Edinburgh, to which he has recently been transferred from Glasgow. His name has been during the last two or three years in the mouth of many persons, and there is a good deal of difference of opinion on the value of the doctrines which he professes. As you see him now he is a man some 40 years of age, rather above the middle height, but not tall, of stately presence, with a broad brow and a face which betokens earnestness and amiability, but scarcely, perhaps, that determination of which he gave such signal proof in the course of the next five-and-twenty years. He is very neatly clothed in garments of a sombre hue (indeed, I think he belongs to the sect of Quakers), and his address is slow and without the attraction of eloquence, and he describes his methods with such detail and exactitude as must have been tedious to many of his audience, most of whom do not profess his principles and few of whom follow his practice. Yet this is none other than the great Lord Lister, as yet almost an unknown surgeon, and he is telling to probably the largest number of persons he has hitherto addressed the principles of antiseptic surgery. And thus he finishes:—

> For, sure I am that, however much the means of carrying out the antiseptic principle may come to vary from those which we now use, the principle itself will certainly be ultimately recognised as the most important of all those that shall guide the practice of surgery; and the sooner our profession is aware of this, the better it will be for suffering humanity. (Collected Papers, 1909, vol. ii., 198.)

Now visit with me the town of Worcester 11 years later, where the Association is celebrating its fiftieth anniversary (1882). And enter the town-hall a little late, as I did, for the commencement of the Address in Surgery. This time the speaker is a tall Irishman (Sir William Stokes), and at the very moment you enter he is supporting the antiseptic principles with the true eloquence of his countrymen; and well he may do so, for only three years previously, at a meeting of the Association at Cork, the principles had received a nasty blow from my eloquent and gifted colleague, Mr. Savory. The orator's head is thrown back, his chest well forward, and he is in the full swing of his address, assisting the effect of his words by the grace of his action. He is dressed in a tweed suit, if I see aright, and I really believe that the strap of a field-glass hangs over one shoulder. But he is not, on that account, the less in earnest, and his address is a rightdown good address.

And now take six years ago, when a Scotchman occupies the platform at Oxford, tall and stately, a man amongst men (Sir William Macewen), who speaks in grave terms befitting the speaker and the subject. He speaks also, like the others, on sepsis and antisepsis, but the principles have long since been accepted, and it is only questions of detail which occupy the attention of the meeting.

There is only one other address to which I would conduct you—that on pathology at the Cambridge meeting 30 years ago, where my revered master, Sir James Paget, is the speaker. His eloquence is such that had he been blind he would still have been a leader of men; and the genius of his mind looks forth so clearly through his eyes, that had he been speechless he might still have commanded many persons to his will. He is speaking on a subject hitherto but little dealt with—"the consequences of injury and disease in the structures of plants." Until that moment there were few people who were aware that he had ever studied it; but, as he spoke of it, it seemed as if it had been the one great study of his life. You can hear him now, as he says:

> Is there in all the range of natural history a more marvellous group of facts than may here be studied? If you would like to work out a problem in evolution, find how it has come to be a part of the ordinary economy of Nature that a gall insect compels some part of a plant to grow in a manner which, while injurious to the plant, becomes useful to one insect not yet born and to another who will, in due time, invade the gall and kill and feed upon its occupant, and then may itself be invaded and eaten by a third. (Memoirs and Letters, 1901, p. 304.)

Such have been the men and of such a kind have been the subjects that have occupied the attention of large audiences at our annual meetings. And although I cannot promise you that the meeting of 1910 will bring forth any great discovery in medicine or change the whole face of surgery, I can confidently promise that the scientific part of the meeting, with its 21 sections, each presided over by a distinguished person, and that the Addresses in Medicine and Surgery will be worthy of so great an occasion.

II. PUBLIC MEASURES.

From its very foundation the Association showed great interest in matters in which the public or the State and the profession were involved. In the first half-dozen years it had appointed committees to consider vaccination, the condition of parochial registers, Poor-law medical relief, medical relief of persons who are poor but not paupers, the suppression of quackery, the sale of arsenic, and other matters, and there was no reason to doubt the existence of that "zeal and alacrity" on the part of the members which had been recommended by Dr. Hastings in his first address at Worcester. They seemed full of energy and enthusiasm. There can be no question that the Association did influence legislation on many of these matters in which the interests of the public and of the profession are involved. But I thought I should like to be able to tell you to-night the history of some one instance, at least, in which the influence of the Association was paramount, and was acknowledged by the public as well as by the profession. My own knowledge did not supply me with any such example, so I turned to my friends, the editor of the *Journal* (Dr. Dawson Williams), and the financial secretary (Mr. Elliston, whose father was a valued member for many years, and President ten years ago at Ipswich), and begged them to help me. Although neither of them could give me exactly what I wanted, they nevertheless did put me on the track of what I wanted, and I followed up the track, as you shall presently see.

In order fully to understand the term "medical reform," I must take you back to the early years of the last century, when a man might practise every branch of

medicine and surgery on a qualification obtained by a single examination in either surgery or medicine, to the time of Bob Sawyer and Ben Allen; when the examinations of the various qualifying bodies in Great Britain and Ireland varied remarkably in severity, and there was no central authority which could influence them to alter the terms of their examinations; when there was no registration of legal qualifications, and it was difficult for the public, or even for the profession, to discover what men were qualified and what men were practising without a qualification. The condition of affairs was so unsatisfactory that in 1834 a Royal Commission was appointed to "inquire into and consider the laws, regulations, and usages regarding the education and practice of the various branches of the medical profession in the United Kingdom." Three years later, at its fifth annual meeting, the Association appointed what may be called its first Medical Reform Committee, with the somewhat wide instruction "to watch over the interests of the profession at large."[1]

In 1840 a Bill was introduced into the Commons by Messrs. Warburton, Wakley, and Hawes, which contained provision for the establishment of a central council and for the direct representation of the profession on it.

In 1842 the Council of the Association presented to Sir James Graham, the Secretary for the Home Department, a memorial explaining the principles of medical reform which were advocated by the Association: a uniform and efficient primary qualification; representation of the profession on the governing bodies of the corporate institutions or on the proposed central council; and the registration of legal qualifications. The Association desired to wait upon the Home Secretary by deputation, but Sir James Graham would not consent either in that year or in the following year to receive a deputation. He, however, introduced a Bill into Parliament in the year 1844 which contained a scheme of registration.

In 1846 Messrs. Wakley and Warburton again introduced a Bill for the "Registration of the Legally Qualified Practitioners in Great Britain and Ireland." Although this was only a small part of what the Association desired, it nevertheless presented a petition in favour of the Bill, on the principle that the gain of a little is better than the loss of the whole. In the course of this year a deputation was actually received by the Home Secretary, Sir George Grey, who advised that the Association should approach such other of the medical bodies as were in favour of medical reform, and thus obtain stronger influence to bear upon the Houses of Parliament. The advice was accepted and acted on, but without success, and the Association was left to fight the battle alone.

Nothing seems to have been done for the next five years, when the Association, wearied by long waiting, directed its Medical Reform Committee to draft a Bill on its behalf (1851).

In 1853 a deputation was received by Lord Palmerston, who was then Home Secretary, and even by the Prime Minister, the Earl of Aberdeen, whose grandson is one of our honorary members at this moment. Both these noblemen expressed sympathy with the views of the Association.

In 1854 Mr. Craufurd introduced a Bill, but it was soon lost, and a memorial was sent up to Lord Palmerston.

In 1855 a deputation waited on Sir George Grey, who was again Home Secretary, and a Bill was introduced into Parliament by Messrs. Headlam, Brady, and Craufurd, but was abandoned at the second reading.

In 1856 Headlam's Bill, which provided for a central council of which one-third of the members should be direct representatives of the profession, was again introduced into the Commons. It was supported by Lord Palmerston, and petitions were sent up by many branches of the Association in favour of it. But it fell through, and so did a second Medical Reform Bill which was introduced during the same session of Parliament.

It was in this year that the Association changed its name, and to some extent its character, for it ceased to be the Provincial Medical and Surgical Association and became the British Medical Association. I do not know whether it was on that account or for other reasons, but sure it is that a very remarkable circumstance occurred in the course of the next year—

1857, when the Home Secretary (Sir George Grey), instead of being pursued by the Association, actually was himself the pursuer. He sent for Sir Charles Hastings to hear his views once more and to discuss with him the measures which should be taken. Finally, in

1858 Lord Elcho introduced the Bill which became in the course of that session the Medical Act of 1858. It provided for the establishment of a General Medical Council and for the registration of medical qualifications. The influence and work of the Association were recognised by the appointment on to the first Medical Council of Sir Charles Hastings, the founder of the Association.

And now it might be thought that the Association, triumphant after many years of strenuous labour, would have been content with its achievement. But, alas! very little had really been accomplished. There was no minimum uniform and efficient primary qualification, and a young man might practise medicine on a surgical qualification or the reverse, while there was no obligatory examination in midwifery. Registration was therefore little more than a farce. Again, there was no direct representation of the profession on the new Council, and the action of the Crown in its appointments did not fulfil the hope which had been cherished by the reform party. Only those persons who have for years devoted themselves to public affairs and whose whole heart has been in the struggle to carry a particular measure through can understand the terrible disappointment of the reform party. They had wrought for three times seven years for Rachel, and it was the hand of her sister Leah which they had at length obtained. To many zealous men these failures of a public measure are more bitter than the failure of their own private affairs. Their vigour is apt to be impaired; their health to be broken. I should have been but little surprised if the Association had, from this time, made up its mind never again to meddle with Bills in Parliament. And certainly it did seem that its strength was spent. For, like some great animal heavy and sore from the wounds of a long and deadly combat, it lay prostrate for nine years. Then, as it were, it slowly lifted up its head, and, looking round, perceived that, not only was there no direct representation of the profession on the General Medical Council, but that, now that Sir Charles Hastings was dead (1866) there was not even a representative of the Association. Nevertheless, feeling that the new Council which it had helped to create knew what it had desired, and, therefore, hoping that it would be likely to join with it in attempting to obtain reform, the Association sent a deputation to the General Medical Council in the course of the year—

1868. But the reply was that, "under present circumstances, it would not be expedient for the Council to consider the propriety of attempting to obtain a change of constitution," and it was thus found that, instead of a friend and ally, this new body was likely to prove a serious obstacle to reform.

In 1869, therefore, the Association began afresh. A deputation waited on the Lord President of the Privy Council (Earl de Grey and Ripon), who, in the following year—

1870, introduced a Bill into the Lords, but it contained no provision for direct representation, and the Association would have none of it. A deputation was again sent up to the Lord President and to the Vice-President of the Privy Council, and the Bill fell through owing to pressure of business.[2]

[1] Most of the information contained in this account of the doings of the Association in relation to medical reform is taken from Dr. Alexander Henry's "Historical Sketch" in the British Medical Journal of 1882, vol. ii., p. 847. The latter part of the account is picked up from the reports of the Medical Reform Committee in the Journal and from other sources. Dr. Henry's "Historical Sketch" is profoundly interesting to every person who cares for the past and present of the Association, and I strongly recommend its perusal to all those who are now engaged in the work of the Association.

[2] Many years later I was present at the dinner of the Association at the annual meeting at Leeds, when Lord de Grey, then Marquis of Ripon, referred to this matter. Part of his speech ran thus: "He was bound to say he had occasionally found in those departments (the War Office, the Admiralty, and the Privy Council) men of ultra-official views who were so irreverent as occasionally to speak in terms not altogether of admiration or respect for the British Medical Association. He once, indeed, had to suffer from the action of the Association. When he was Lord President, he endeavoured to deal with the subject of the constitution of the General Medical Council, and he introduced a Bill which he thought was a very good one, and most of the provisions of which had since become law. It did not, however, contain one provision greatly desired by the British Medical Association, and they so effectually pleaded for delay at a fatal moment towards the end of the

In 1873 our old ally, Mr. Headlam, came to the assistance of the reform party, and introduced a Bill, which was also lost through press of business.

In 1877 history was repeated, for, wearied of long waiting, the Association directed its committee to draught a Bill.

In the course of the next session—

1878, the Bill of the Association was introduced by Messrs. Mills and Childers, and another Bill was introduced into the Lords by the Government, but both Bills were lost; they were again introduced in the course of

1880, passed the second reading, and were referred to a Select Committee. I suppose, as the consequence of this, in

1881, a Royal Commission was appointed to consider the working of the Medical Act. The Commission was not long in reporting, and in

1882 the Reform Committee expressed satisfaction with the terms of the report, and sent up a deputation to the Lord President of the Council. It is a mark of the growing influence of the Association that this deputation was introduced by no less a person than the Duke of Westminster. During that session a Bill was presented to the Lords by the Lord President, but it was lost in the Commons from lack of time.

In 1884 the Bill was again introduced, was accepted by the Lords, and made a Government measure in the Commons; but it met with such strong opposition on the part of bone-setters, cancer-curers, herbalists, and the like, and from one or two of the corporations, that it was lost, in spite of the evident desire of the Government to carry it through.

In 1885 a less ambitious measure was introduced, but a change of Government took place, and the measure was abandoned.

In 1886 the Medical Reform Committee urged the importance of reform so firmly on the new Government that a measure was passed through the Lords by the Lord President of the Council (Earl Spencer), and through the Commons by Sir Lyon Playfair, and became the Medical Act of 1886. It provided for direct representation of the profession on the General Medical Council, and that a legal qualification to practise should only be obtained by those persons who had passed an examination in medicine, surgery, and midwifery.[3]

Thus, after nine-and-forty years of labour, the Association had been successful, not to the full extent of its desires, but to a very large extent. And it had every reason to be proud. You see that I have taken the trouble to learn all these details in order to narrate to you what you may deem a very tedious story. And you may be sure that I did not learn them easily. And you may ask why I was at such pains to make myself master of a story so full of tedium. It was on that very account I did it. I would have every member of the Association learn the story as I have learned it—particularly every young member. I would have it printed in large type and set up in every building which is devoted to the service of the Association that all men may find in it an object-lesson of what can be done by patience and perseverance, by determination and tenacity of purpose.

So I would have the names of all those members of the Medical Reform Committee who took an active part in its work handed down: of Hastings of Worcester, Barlow of Bath, Crosse of Norwich, Southam of Manchester, Stewart of London, Waters of Chester, Ernest Hart, and many others. They are all gone, and there remain only a very few of those who took part even in the promotion of the second Medical Act, Dr. Bruce Goff and Dr. Hugh Ker, who are still working for the Association, and Sir Walter Foster, now Lord Ilkeston, who was one of the first direct representatives of the profession on the reformed Medical Council. I am proud that we have these three members with us this week.

session that they defeated the Bill, and stranded him altogether until he was carried away in the wrong direction by the rising tide of opposition. He was bound to say—and he made the confession very frankly—that he was now convinced that the Association was right and he was wrong. He was, perhaps, on that occasion—it was a rare occasion in his public life—somewhat too conservative."

[3] The Association had fought for many years for eight Direct Representatives on a Council of 24 persons. The Bill only provided for five—three for England, one for Scotland, and one for Ireland. Only in the course of last year (1909) was the representation increased by the action of the General Medical Council itself.

III.—Scientific Grants and Scholarships.

Now, take quite another phase of the work which we have done. In the "seventies" of the last century there was not so much talk of original research as there is in these days, and but little money was then supplied for research. In those days, as in these, there were many men, for the most part young men, who were waiting about the hospitals for a place upon the permanent staff or were hoping to get into private practice. They were just able to maintain themselves (for few of them had much private income) by teaching and minor posts and appointments. They often had time on their hands, and, being above the average of young medical men in intelligence and education, were willing and glad to seek occupation and perhaps a name in original research. They were often able to find a work-bench in one of the hospital laboratories and aid and counsel from the professors and lecturers. But the researches were, in many instances, expensive, and they had not the means to meet the expense of material and apparatus. When the Association began to find itself in funds it was suggested to the Council, I believe by Mr. Ernest Hart, that a certain sum of money should be awarded every year to research workers to assist them to obtain the material and apparatus which they could not procure for themselves. In the year 1874 the scientific grants were founded; £165 were granted that year, and I am sure it will be a matter of interest to some of the members here to-night to learn that the first grant out of that sum which appears on the minutes was a grant of £50 to Mr. Hicks for "researches on alcohol." I do not know how many grants have been made or how many researchers have benefited by the scientific grants, but I do know that from £300 to £400 a year have been awarded every year, and that such men as Washbourn, Bayliss, Starling, Rose Bradford, Kanthack, Halliburton, Gaskell, and many others quite as distinguished have been recipients of grants, and that a large number of researches have been made possible by the liberality of the Association.

Ten years later (1884) two research scholarships of £150 each were founded, to enable men to devote their whole time to particular researches. Since that time there have been some 50 scholars of the Association, and it will suffice to tell you that Sir Watson Cheyne, Dr. Sidney Martin, Dr. Stockman, Dr. Copeman of the Local Government Board, Professor Haycraft, and Professor Starling have been scholars of the Association to prove to you the pains which have been taken to select persons fitted to pursue original research.[4]

It has been my lot to speak both for and against the scientific grants on more than one occasion. As Treasurer of the Association I have had to restrain the ardour of the committee and to prevent it dipping its fingers too deep into the purse of the Association. As a member of the committee, I have had to defend the grants from the platform at the annual meetings. There have always been members of the Association who have grumbled that the money devoted to scientific purposes was not applied to the defence of members and to the suppression of illegal practice. And, even of those who approved of the grants, there were always some who grumbled at the nature of the investigations and wished to see the money applied to investigations which were likely to find a certain and immediate practical application. I confess that these latter grumblers have sometimes had my sympathy. Researches on pulse-curves and researches on biliary secretion seem a long way from practical medicine. Yet I would not, on any account, interfere with or appear to despise any research, however little it would seem likely to be useful in the practice of medicine and surgery, provided it is in the hands of a competent worker, and is likely to provide new knowledge. The last time I spoke in favour of the grants was, I think, at Cheltenham, where I directed the attention of the meeting to the vast commercial and industrial use which had been made of Faraday's discoveries of the relations of magnetism to electricity. The discoveries seemed to belong to the purest

[4] Sir Watson Cheyne, Bart., surgeon to King's College Hospital and surgeon-in-ordinary to His Majesty the King; Dr. Sidney Martin, physician to University College Hospital and professor of pathology; Dr. Ralph Stockman, professor of materia medica at Glasgow and physician to the Western Infirmary; Dr. Copeman, medical inspector to the Local Government Board and lecturer on public health to Westminster Hospital Medical School; Dr. Starling, professor of physiology at University College; Dr. Haycraft, professor of physiology at University College, South Wales, &c.

realms of science, and nobody could have foreseen their practical application. And it was not Faraday himself who made the application. He would never touch that side of the question, as he believed that to do so would damage his powers of research. Tyndall speaks particularly of this,[5] and I am sure that some discoveries which have appeared to have no practical bearing have resulted in greater advantage to the practice of medicine than some of those researches which have been undertaken from the purely utilitarian point of view.

At the present moment it is the fashion to say that things are better managed in Germany; as people said in my young days, "They do these things better in France." Although I do not at all admit this as a general proposition, I think it is to some extent true when it is applied to the relative value which English and German business men attribute to scientific research. I am informed that some great industrial concerns in Germany build and equip large laboratories in which 50 to 100 chemists are continually employed at varying salaries according to their position, and that they are directed by the most distinguished chemist the industry can procure. These chemists are not only permitted but are encouraged to prosecute research, and the researches are not limited to the possible utility to the industry, but may take any direction which seems good to the worker and the director. The object of the industry is to encourage chemical and physical research, with the full confidence that in a series of years the industry will derive enough benefit to pay the cost of the laboratory, and will probably derive more benefit than it would do by limiting the nature and scope of the researches to the possible service of the industry. Only the other day I was looking through the "Collected Papers of Lord Lister," and noticed that the earliest researches which he made were on muscular and elastic tissue. Suppose that he had been dissuaded from these researches on the ground that they seemed to have little or no practical bearing, he might have been so far discouraged as never to have undertaken original research. What a lamentable thing that would have been! What a loss to human beings! No, the taste and faculty for research need to be encouraged in a likely worker, even if the objects of his researches give no hope of immediate practical value.

Nevertheless you may fairly ask me whether I am not able to show something of value to practical medicine and surgery which has resulted from the money which the Association has devoted to science. Yes, I could give you several instances if I had time to do so, but one must suffice. In 1883, in consequence largely of an observation made by my old friend Sir Felix Semon, the Clinical Society of London appointed a committee to consider the nature and relations of myxœdema. The work of the committee was divided into several parts, to which competent persons were assigned. The experimental part was chiefly under the charge of Professor Horsley. It was essential to the completion of the work of the committee but it was costly, and the Clinical Society had not made any grant towards it. This part might have fallen through, and the report of the committee might have been seriously prejudiced, and its value profoundly lessened, had not the Association come to the aid of the committee with a substantial grant, which was supplemented after an interval by further sums towards an inquiry into the physiology and pathology of the thyroid gland. To this work may be attributed thyroid-therapy and a wide knowledge of the relations of the thyroid gland to health and disease. And indirectly it may be said that this was the beginning of all the knowledge which has since been gained on the physiology and pathology of other of the ductless glands.

One matter to which the Association has largely contributed is the study of chloroform. Several committees have been appointed on this very important subject. The last committee has only just published its report.[6] I have read it carefully through and have formed the opinion that the £700 which have been devoted to this committee is a very small sum in comparison with the practical value which the work of the committee is likely to have. At least £1500 have been given to the various committees which have worked on this subject for the Association.

There is one grant which was made by the Scientific Grants Committee 18 years ago, and actually paid over to the applicant, but I am sorry to say it was never used. It was made to a certain Surgeon-Captain David Bruce to assist him in the investigation of Malta fever. Other arrangements were made for Captain Bruce, so the money was returned to the Association, otherwise we should have had the credit of having assisted that distinguished military officer in the very early days of his researches. What a satisfaction that would have afforded every member of the Association!

I can only further tell you that, including grants to the Jenner Institute, to the Therapeutic and other committees, the Association has provided more than £33,000 for scientific purposes since the year 1873.

IV. BENEVOLENCE.

Just now I spoke of the dissatisfaction of some of the members of the Association that our revenues are devoted to scientific purposes instead of to the needs of the profession. It seems to have been determined very early in the life of the Association that its income should not be applied to the benefit of the members. When the Association was incorporated under the Companies Acts in 1874 it was expressly stated in the Memorandum that the members of the Association should not be entitled to benefit from the income of the Association.

But from the very first the members were mindful of the material necessities of the profession. At the first annual meeting in 1833 Dr. Barlow, of Bath, presented proposals for the establishment of a benefit fund. The proposals were ordered to be printed and circulated among the members. At the third annual meeting it was recommended that a society be formed, to be called the Provincial Medical Benevolent Society, and that a fund be accumulated by subscriptions and donations. It is quite pathetic to read in the report of the Benevolent Society two years later that the committee had been enabled to bring the fund into operation and to afford relief in two cases of distress. For many years the Benevolent Fund reported each year to the annual meeting of the Association, which took the greatest interest in its affairs and which has continued to interest itself in them from that time to the present. The pages of the *British Medical Journal* have always been open to official communications, to letters and articles in favour of the Fund, and even the machinery of the Association has been used, by the kind permission of the Association, for collecting subscriptions and donations towards it with such success that last year the Fund was able to boast that since its establishment it had distributed about £76,000 in annuities and the same amount in grants, and now administers about £4500 a year; that out of the income derived from investments it supports 126 annuitants, who must be over 60 years of age, and that the annual subscriptions and donations form a fund out of which grants are made to deserving cases not eligible for annuities.

I am not exaggerating when I say that the British Medical Benevolent Fund owes its origin, its first successes, and its present position to our Association.[7] It has probably done better as an independent body than if it had been, as was intended in the first instance, a part of, and dependent on, the Association. I doubt whether it would have received anything like so large a sum in donations and legacies as it has actually done. On the other hand, its relations with the Association have been throughout of such value to it that the good influence which the Association has exercised over its affairs cannot be too highly estimated.

To those persons who are disposed to complain that the Association has never done anything for the material welfare of its members or of the profession this account of the British Medical Benevolent Fund is my answer, and I trust I shall never again hear the complaint.

V. ORIGIN AND PROGRESS. GREAT OFFICIALS.

Although I am not going to furnish a history of the rise and development of the Association, there are certain matters in its past which will interest the members here to-night. It was founded, as you know, in the year 1832, when there were but few railways, when the lesser roads were not too good, when it took days, not hours, to reach the metropolis from many parts of the country, and when perhaps more doctors rode on horseback than went in wheeled vehicles to see their patients. Yet even then Dr. Hastings, who founded the Association, said, in his address in the board room of the Worcester Infirmary, "The facilities of communication between distant towns ..... had

[5] Faraday as a Discoverer, London, 1870.
[6] Brit. Med. Jour., Supplement, July 9th, 1910.

[7] See Brit. Med. Jour., 1905, vol. ii., p. 1655.

become so much greater that distance would afford but a slight barrier to the undertaking."[8] At the first annual meeting in 1833 about 200 of the total 316 members were present. But the Association made but slow progress in the course of years. In 1874, when it was incorporated under the Companies Acts, it only numbered between 5000 and 6000 members. And as to its finances in the early years, they were deplorable. Four-and-twenty years (1856) after its foundation it was £2000 in debt, and the members had to put their hands into their pockets to help it out.

Although it met in different large towns in the United Kingdom, it was not until the thirty-eighth meeting, nearly forty years ago, that its presence was officially recognised by the appearance of the Mayor, Sheriff, and Under-Sheriff of Newcastle-on-Tyne at the opening meeting in their robes of office. The scientific business of the annual meetings was only divided up into sections just before that time (1867), when four sections were established—Medicine, Surgery, Physiology, and Midwifery. Indeed, the progress which was made during the first half of its life (of 78 years) would never have justified an observer in predicting its present numbers and importance. It was just about 38 years ago that it began distinctly to advance; and, as usual, it was not measures, but men, that caused the advancement. Indeed, there has never been any question in my mind on this point. Nor have I ever had the least doubt of the particular men to whom the Association owes more than to any other men, dead or living. They were both officials of the Association, and each of them remained in its service for more than 30 years.

The first was a little sallow-faced Jew, with clean-cut features and piercing eyes, active in mind and body, clear-headed and as keen as men are made. The reputation of our *Journal* when Mr. Ernest Hart became its editor in 1866 was none too good, and only in the previous year a proposal had been made to the annual meeting to replace it by a less expensive journal. From the moment Mr. Hart took it in hand its future was ensured. His wide knowledge of all matters connected with his profession, private and public, professional and general, and his skill in writing, would have enabled him easily to perform all the editorial work which was then needed or was likely to be needed for many years to come. But that was not his idea of editing. He gathered to his aid every man who had a special knowledge of any subject which appeared in the pages of the *Journal*, and persuaded him to give his opinion on the value of the communication, and even to write unsigned articles and annotations upon it. I was very much surprised the first time I signed the quarterly cheques to discover the large number and the position of the contributors to the *Journal*. Each man was paid for his contribution, but while a good deal was paid away each year, no one person received much more than a trifling sum. This was, I believe, an expensive way of conducting it, but in a very few years it had made the reputation of the *Journal*. When Mr. Hart became our editor the number of members was only between 2000 and 3000, and when he resigned, after 34 years' service, it was 17,000. The work of editing would have been quite enough for most men; it was only a small part of what was done by Mr. Hart. There was no question of public health which he did not deal with or attack. And his interest in all that concerned or might concern the Association in the future was truly remarkable. I believe the foundation of the scientific grants and scholarships was largely due to his influence. I *know* that the library owed its actual origin to him, although it had been considered at the very first meeting of the Association. The Medical Sickness Society was, Dr. Hall tells me, his idea. His mind teemed with fertile thoughts, and they were always at the service of the Association if they were likely to be useful to it.

The other official was Mr. Francis Fowke, not known to the members as the editor was, and really only understood and esteemed by those persons who were closely associated with him in business affairs. He was our general secretary and manager, and to him fell the charge of all matters connected with the printing and publishing of the *Journal*, the advertisements, the collection of subscriptions, the arrangements for the annual meetings, and I know not what else. He it was who advised the removal of the offices of the Association to that great artery of traffic, the Strand; who gradually took over the printing of the *Journal*, the provision of the paper on which the *Journal* is printed; who studied various methods of improving the illustrations in the *Journal*; who devoted his attention to every little business detail with such success that the surplus income of the Association, which was £38 when he became its manager in 1871, was nearly £5000 when he resigned his post in 1902. No wonder that successive treasurers placed their confidence in Mr. Fowke, and supported him one after another in the schemes which, with great caution and after long pondering, he put forward for some improvement in one or other of our business methods.

It would be difficult to find two men less like each other than the editor and the general secretary and manager. Mr. Fowke was gouty and asthmatical, nervous and apprehensive, constantly apologetic, slow of speech, and slow to form a judgment, particularly in matters relating to finance. No wonder his brilliant colleague looked upon him with a feeling almost of contempt. But there is no use denying it. In spite of what was said in some of the obituary notices of the editor's financial abilities, and in spite of his nationality, he was really a very indifferent financier. And this was appreciated fully by the manager, who repaid the feeling of contempt for himself by the strongest expression of distrust of the financial schemes of the editor. It may easily be imagined that there were no feelings of cordial friendship between two such men. This was quite well known to many persons interested in the Association, and during the years I was treasurer it was several times suggested to me to do my best to heal up the dissensions between the two great officials. But I would not listen to such suggestions. No lasting peace was possible between them; and my own opinion was that the safety of the Association was better secured by their hostility to one another than it would have been by their friendship. Each kept a watch upon the other useful in the interests of the Association. Had they combined there might possibly have been mischief. Had there been two Harts, the Association would probably have been swiftly borne to that great personage to whom the beggar on horseback is said to ride. Had there been two Fowkes, it might have gone to sleep. Peace be to the ashes of these two men, and let us be thankful that their places are so excellently filled by our present editor and financial secretary (Dr. Dawson Williams and Mr. Elliston).

VI. THE FUTURE.

I fain would speak of many other matters—of the library, of our new premises in the Strand, of the formation and growth of the branches, of the extension of the Association beyond the seas. But I have been warned not to trespass on your patience by speaking at too great length, and the warning is full of wisdom. I must therefore devote the few minutes which are left to me to the present and future of the Association. What is this great society to do with its 22,000 members, its numerous divisions, its 70 branches, its large revenues, its great standing committees, its Council and House of Representatives, its medical secretary's department? Well, since its reconstitution eight years ago it has devoted its attention very largely to the defence of its members and of the profession generally against the attempts which are made with cruel frequency against them by many sections of the community. Whilst extolling the nobility and generosity of our profession as a whole, it is notorious that public and private bodies, municipalities, corporations, clubs, medical aid institutions, and charities vie with each other in their attempts to use our services without reward, or for the smallest compensation which is possible, and it is equally clear that the only chance which the rank and file of the profession—those men who perform the most and the best of its work—have to repel these attacks is the support of a great and powerful body like our Association. Medical men talk of these things as if they belonged only to modern times; as if, until recently, we had been fairly treated, and no attempt had been made to impose on our good nature. I would ask them to read a certain report of the first committee which the Association appointed to consider the question of Poor-law medical relief, presented 75 years ago (1835).

> Your committee are aware that the vast amount of gratuitous medical assistance that has been at all times afforded to the needy by all grades of the profession throughout the country (an amount that could not be

[8] Brit. Med. Jour., 1882, vol. i., p. 847.

conceived by those who were not informed on the subject) has been productive at least of one very injurious effect; it has induced the unthinking portion of the public to conclude that there was some sort of conventional, if not legal, obligation on the medical profession to attend, without reward, to the ailments of the poor.

The words of the committee can be applied with even greater truth to-day, and there has never been a time in the last three-quarters of a century when they might not have been truthfully applied. Years ago, during the time that I took an active part in the work of the Association, we made attempts from time to time to assist medical men in repelling these attacks, and with more or less success. Now the Association is dealing with this part of its work with much greater vigour, and with the intention to do its best to help the oppressed members of the profession. And, as the result, in these last years I believe the body of the profession look with greater hope and confidence upon the future than they have ever done within my recollection. This side of our work has my hearty wish for its success. My mind is frequently saddened by the hard cases of some of those practitioners whom I have known as well-educated, industrious, and intelligent, and who have been cruelly ill-treated by public bodies and societies. But I am afraid there is no side of our work which needs greater tact or more delicate handling than this. An expression of undue force on the one hand, an exhibition of weakness on the other hand, and the amount of mischief which may follow is incalculable. I cannot remember any period of our history when our affairs required more skill and sagacity than the present. Everyone naturally turns to watch what the governing bodies of the Association will do. I watch, like the rest, and I have studied the men who are entrusted with the guidance of our State. I have mixed with the members of the Council and, to some extent, with the members of the representative body in this last year, and I have come to the conclusion that, although their task is grave and difficult, they are the men to undertake it with success.

Address in Medicine

ON

RECENT PROGRESS IN MEDICAL SCIENCE.

Delivered at the Seventy-eighth Annual Meeting of the British Medical Association

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THE DOMINANCE OF ETIOLOGY IN MEDICINE.

MR. PRESIDENT, LADIES, AND GENTLEMEN,—My first duty, and to me the most pleasant of my duties, on this occasion is to thank Mr. Edmund Owen for the high compliment that he paid me in inviting me on behalf of the Council to deliver the annual Address in Medicine. I do thank him heartily, for I appreciate the special importance and distinction attaching to the office when the Association meets in London. I have felt only too keenly in the preparation of my address the difficulty of justifying the selection of me as spokesman for medicine before you, and before a public that is always ready to interest itself in our proceedings. And I have also become keenly aware of the difficulty of finding a fresh line of thought along which to lead a learned audience like mine, and maintain their interested attention for a whole hour—an audience of whom many have listened year after year on similar occasions to my distinguished predecessors.

RECENT ADVANCES.

The annual address is traditionally expected to include a chronicle of the advances that have been made in the science and art of medicine since the last meeting of the Association. Not a year goes by but there is abundant reason for mutual congratulation on this account. The past 12 months are no exception to this experience, and if I were to recount to you our gains during the 15 years that have elapsed since we last met in London we should indeed find cause for satisfaction. I will spare you such a trial of your patience. Our weekly Epitome and our year-books keep us up to date in this information, which we scarcely ought to require if we have done our best to assimilate new facts and take advantage of clinical and therapeutical improvements as they are announced. Therefore I will content myself, and no doubt satisfy my audience, with a very brief record of the additions to our knowledge of disease, and of the improvements in our means and methods of diagnosis and treatment, of the first magnitude only. I will then ask you to survey with me what I consider the principal line of progress in Medicine during this interval, the position that has been won, the prospect lying before us of further advance, and the need and the call for it. It is right that this address should reflect, however imperfectly, the spirit and aspirations of the time.

First of the great events to which my record of the period will be limited comes the discovery of the spirochæta of syphilis; of the part played by the mosquito in malaria and in yellow fever and by the goat in the diffusion of Malta fever; of the connexion of a trypanosome with sleeping sickness, of the Leishman-Donovan body with the kala-azar, and of the *Diplococcus intracellularis meningitidis* with cerebro-spinal fever. The existence of typhoid carriers has been fully demonstrated, as well as the dangers of other typhoid products than the stools. Investigation has been pushed forward during the same period into the relation of human to bovine tuberculosis, and stringent regulations have been framed in respect of milk and meat as articles of food. The effects of oral sepsis have been worked out, and prove to be so widespread, so multiple, and frequently so grave as to make us ashamed of our previous blindness to a common source of blood infection staring us in the face all those years. Auto-intoxication proper has attracted professional, and only too much public, attention and led to the introduction of a great variety of dietetic and medicinal "cures." Of improved methods of observation and diagnosis blood examination in the many forms of its development and in its many applications deserves first mention; and special interest and importance attach to the Widal reaction in typhoid and to the Wassermann reaction in syphilis. Radioscopy, which was coming into clinical use in 1895, has been greatly improved and extended, more particularly in its applications to the investigation of gastric and intestinal disorders and diseases; and the orthodiagraph must be mentioned in this connexion. The sphygmomanometer has been generally employed and cardiac irregularity instrumentally investigated with success. A real advance has been made in the introduction of lumbar puncture as a means of diagnosis in cerebro-spinal diseases.

During these 15 years several new methods of treatment of the first rank have been either introduced or perfected. Chief of all comes serum-therapy and vaccine-therapy, of which I shall have more to say presently. Part of the development of the thyroid treatment of myxœdema and cretinism falls within this period, and with this may be coupled the introduction of preparations of the suprarenal gland into the materia medica. Of great importance is the employment of spinal analgesia as a substitute for general anæsthesia, the dangers of which have been closely investigated in relation to the status lymphaticus, as well as to post-anæsthetic acid intoxication. Other powerful means of treatment have been discovered in radium, in the Roentgen rays, and in the Finsen light. Of a different order, but full of promise, is the use of graduated labour as an element of sanatorium treatment in pulmonary tuberculosis. Of new drugs proper the most important are synthetic compounds with hypnotic and analgesic actions.

INROADS OF SURGERY.

When we consider how great are these gains, both in themselves and in their possible applications, we may be well satisfied with what has been accomplished within a relatively short period in the history of Medicine—of Medicine, I mean, in its comprehensive, original sense, the Healing Art. But if I had interpreted my position to-day as that of a representative of pure physic in the limited sense of the sister art of pure Surgery, I should have had to speak less cheerfully. I should have had to introduce my reference to the outstanding events in the history of Medicine during the last 15 years by lamenting the striking change that has occurred in its scope and in its immediate interests through the many losses that it has suffered at the hands of the surgeon. One after another the great viscera in their pathological and therapeutical relations, as objects of treatment

and of clinical study and demonstration—and, I might add, as subjects of physiological investigation and interest in the medical wards and hospital laboratory—have been taken over in good measure by him. This is one of the revolutions brought about by the epoch-making work of Pasteur and Lister. The graver diseases of the stomach, the duodenum, the liver and gall-bladder, the appendix, the colon in its whole extent, the pancreas, the kidneys, the lungs and pleura—even the heart, the brain and spinal cord—have, one after another, been gradually passing out of the hands and experience of the physician. Consider the loss that this means to medicine—to what the Germans call *innere Medizin!* The physician may well be anxious about his position now and in the future. The field of practice contracts before his eyes. He may be forgiven if he feels a twinge of soreness and even of jealousy pass across his mind when he watches the steady sap of his position by his operating colleagues. But this is only a passing grudge! I associate myself on the present occasion with Medicine in the wider sense, with Medicine as it concerns, not the consulting physician, but the family practitioner, who in his daily work disproves, with Sir Clifford Allbutt in a recent correspondence in the *Times* on this very subject, the necessity of "halving the understanding and management of individual diseases between two sets of persons." Medicine heartily congratulates Surgery on the brilliant advances that she has made, and rejoices with her in them, although many of them have been at her own expense. Has she not gained as much as she has lost by the inroads of Surgery? Surgery has not only effected in treatment much that Medicine failed to do and never could attempt; she has greatly increased our knowledge of the diseases of the viscera, and, indeed, not of their diseases only, but of their disorders, and even of their condition and functions in health, all as the result of direct observation of them *intra vitam*, intelligently employed, and of the effects of operative treatment. Surgery has assisted Medicine in Medicine's own methods; has furnished Medicine with fresh suggestions and fresh means of investigation; and Medicine, never slow nor too proud to learn, has availed herself of Surgery's findings and conclusions to perfect her proper knowledge for her own uses.

THE DOCTRINE OF CAUSATION.

This reference to the direction in which surgery has advanced into the domain of Medicine, and to the doctrine of infection on which this advance is based, introduces us to the greatest of the changes that have passed over Medicine since we last met in London.

The discovery of phagocytosis, and the appreciation of its significance as a provision for meeting the causes of acute disease, extended the seat of interest in the processes of infection from wounds to the blood and tissues and to the immunising properties or provisions discovered in the plasma. Anatomical pathology gradually gave place in great measure to bacteriological and chemical pathology, and therewith Medicine—practical Medicine as well as medical science—has taken a great step forward from the study of lesions to the investigation of processes, of the causes in which they originate, and of the circumstances by which they are controlled.

THE PROGRESS MADE IN ETIOLOGY.

It is on this development of medicine that I desire to address you mainly to-day—on the dominant position in Medicine which the doctrine of causation has come to occupy in the course of the last quarter of a century, and to occupy more and more securely during the period that has elapsed since the last meeting of the Association in London in 1895. For the truth of this thesis I have only to refer you in the first place to my brief record of advances these 15 years. With a few exceptions they have been in the field of etiology—the discovery of essential causes of diseases, such as the spirochætæ and the trypanosomes; of media which bring these into relation with man, like the blood-sucking insects and domestic vermin; and of new methods of investigating infective processes, particularly in the blood. The triumphs of Surgery have taught the practitioner of Medicine to appreciate the fundamental place that etiology fills in pathology, and the significance of the essential, the predisposing, and the incidental elements respectively of the causation of disease. A remarkable change has been, and still is, passing over the character of Medicine. Etiology, which always has been regarded as one of the foundations of rational Medicine, has developed with extraordinary rapidity as a subject of investigation in the bacteriological laboratory and as a subject of clinical inquiry at the bedside. This is an event in Medicine which more than any other appears to me to deserve historical recognition on the present occasion as a subject of interest, not to the profession only, but to the public as well.

When we make a comprehensive survey of the whole field of Medicine during the past 15 years we cannot fail to be struck by the amount of time and labour that has been devoted to the study of etiology and by the abundant results that have been secured by it in the form of accurate knowledge of the causes of disease, the manner of their incidence on the body, the reactions of the body to them, and the circumstances that modify disease in its course. Following, as I have said, in the wake of Surgery and its investigations on the infectious processes on the surface of wounds, Medicine now conducts a methodical investigation into the bacteriological relations of infective processes in the blood and tissues—that is, into the essential cause—in every instance of acute febrile disease. How much has already been done and how much is daily being done in this attractive and promising field of observation, and how encouraging is the success that attends the applications of this newer knowledge in practice, was revealed to us a few weeks ago in the brilliant discussion on the use of vaccines at the Royal Society of Medicine, with which many of you, no doubt, are acquainted. It is true that the usefulness of serum-therapy and vaccine-therapy is still far from being settled. Diphtheria, typhoid fever, the pathological effects of the bacillus coli, and certain diseases of the skin yield to the method, and acute pneumonia does so in some instances; but the medical septicæmias, tetanus, and even tuberculosis after all the time and labour that have been devoted to the investigation of tuberculin, only too often do not, unless it be tuberculosis of the skin and the bladder. We ask ourselves the meaning of this relative failure of the internal applications of our knowledge of the infections—our failure as compared with the successful results of aseptic Surgery. The question introduces us to the elements of the doctrine of infection and of the associated doctrine of causation.

FACTORS IN INFECTION AND IMMUNITY.

Medical treatment of the infectious processes is relatively disappointing, mainly because we do not enjoy the incomparable advantage which presents itself to Surgery of dealing with the infection in advance of its action by employing aseptic measures to prevent the contact of it with the blood and tissues. Before the practitioner is required to deal with the germ and its effects on the body, it has already reached the field of its operations and commenced its pathogenetic action. What is to be done? Observation demonstrates that even then it may not be too late to interfere. In a number of instances, as we have just seen—unhappily too few—successful resistance can be offered to intruding micro-organisms and to their toxic products. An antibody or an antiproduct may be introduced into the blood, or developed in it, in time to establish immunity.

This discovery, for which we have to thank Pasteur and Metchnikoff in particular, and their spirited and devoted followers, is after all but a scientific confirmation of the correctness of two well-established observations and a time-honoured conclusion founded upon them. The first of these observations was that whilst a large proportion of individuals fall victims to the infectious or contagious diseases, a considerable proportion do not. The older observers did not fail to be struck by the fact that this liability, proclivity, susceptibility, of certain persons as compared with others to be infected, or greater disposition to suffer severely from the disease or to die from it, was met with in the delicate and weak, and they formulated the doctrine that such delicacy or weakness is a predisposing cause of acute disease. We have come to express the same conception of the etiological relations of acute disease in other terms. We say that all individuals possess in some degree a provision of protection or resistance to the actions of pathogenetic organisms, which is to be regarded as natural—that is, as a normal or physiological safeguard against infection. Our blood and tissues

have acquired this faculty of immunity or of developing immunity in the struggle for existence; they exercise it when provoked by the presence of infection; but in many individuals it is defective and fails because of some present personal circumstance, or of some remote family or racial weakness.

The second observation is that even those individuals who resist the action of invading organisms, who, for instance, harbour germs in their tissues without local damage or constitutional disturbance, may at any time under certain circumstances—that is, under changed conditions of life—lose their power of resistance. The germs that have been lying inactive within them suddenly manifest evidences of vitality in themselves, with disorder or disease in their host as the result. This is a fact of the first importance. It proves that there may be yet another element in the causation of acute disease; that there are three factors to be reckoned with. First, there is the cause which we call essential, the specific infection, an extrinsic influence, the element without which in the particular instance, and in every other instance, the disease would not have occurred. Secondly, there is the patient's resistance to the specific infection, an intrinsic element. Thirdly, there may be incidental or concomitant circumstances or associations which are not essential, because not present in every instance of the disease, but which, by occurring incidentally in particular instances, either favour the essential influence directly in its invasion of the body, or, on the other hand, lower resistance, and thus indirectly contribute to the production of the disease.

CONCOMITANT CIRCUMSTANCES IN DISEASE.

It is of this third element of etiology that I desire to speak to-day, with respect more particularly to its nature and forms, and with respect to the opportunities that it affords the practitioner, not only to forecast, prevent, treat, or otherwise control disease, but to take part in the advance of medical science.

These concomitant circumstances are of great variety, both in kind and in the manner of their incidence on the body. When they act immediately they are commonly known as the exciting, precipitating, determining "causes" of disease; for instance, a street accident that introduces the tetanus bacilli into the blood; the summer season, which produces the essential cause of hay fever; the hour of the day that determines an attack of ague; the emotional shock or the gastric catarrh that lays a person open to invasion by the germ of cholera; the drinking bout that precipitates acute pneumonia; the measles that determines an outbreak of tuberculosis; the different climates that favour the life and activity of different parasites; and also the different media—particularly food, drink, and air—that serve to convey the essential extrinsic cause into the victim. And these are but one group of the incidental circumstances that share in the production of disease, that may contribute to its causation in different cases, but are not an invariable factor of it. In a large number of instances the connexion is remote. It is found in the circumstances and life-history or record of the individual, or of his parents—insanitation, unwholesome occupation, dissipation, misfortune, privation, or disability left behind by previous illness, which have been slowly and steadily sapping constitutional resistance, and have reduced it to a state of inefficiency by the time that the struggle with infection or other morbid influence comes. I repeat that the outstanding feature of the Medicine of the present time is the study and practical applications of this doctrine of general etiology from the two sides—from the second as well as from the first side, that is, with respect, not only to the nature and incidence of the specific causes of disease, but also to the nature of immunity and the circumstances under which it fails. Whilst the pathologist in our public institutions, in hospitals, and in private laboratories, investigates the biology of germs and the immunising value of the blood by means of the opsonic index and otherwise, the practitioner estimates, as he has done from time immemorial with more or less intelligence and success, the value of what he calls his patient's constitution. He does this in part by ascertaining his patient's present bodily condition in respect of structural soundness and absence of functional disorder. But he pushes his inquiries on the subject much further. He obtains his patient's entire record, family and personal. He informs himself of the circumstances under which his patient has been born, has lived, and is living, being assured that, after all, what we dignify with the name of natural resistance is but the product, the embodiment as it were, of all the influences that have fallen on the man—racial, congenital, and personal.

The knowledge thus acquired by the practitioner he turns to practical account in two directions. First, he uses it as a guide in the immediate management of the case. Since he cannot prevent the inroad of germs, nor remove them, and since he can but seldom destroy them within the body, he may enable the patient to resist them. He protects the blood and tissues from the action of the infections by maintaining natural resistance at a high level—the method practised in sanatoriums for tuberculosis by means of fresh air, abundant feeding, and graduated exercise. Or—which is an object of far more frequent and far more extensive concern—he promotes personal and public hygiene in anticipation of disease, and succeeds in restoring, cultivating, and maintaining or increasing the natural resistance of the individual, the community, and the race against the time when infection may fall upon them.

But, secondly (and here I crave your particular attention), in devoting attention to these other elements of causation, the practitioner contributes his share of the materials of which the doctrine of etiology is being constructed. Not all of us, indeed but few of us, can work at the higher pathogeny. In respect of infections, we can but admire the skill and perseverance of our bacteriologists, assimilate as much as possible of their conclusions, and seek their help in the diagnosis and treatment of this class of diseases. Bacteriological investigation is too delicate and too difficult, and depends too much for its usefulness, and even for its safety, in practical Medicine on correctness of conclusions based on skilled observation, to be conducted by the practitioner himself unless in a few cases. But we can all take a share in the cultivation of knowledge of the other branch of etiology. After all, the pathological laboratory is not the natural field of operation and observation of the action of the infections, excepting in those instances, unhappily not uncommon, where the worker himself falls a victim to the disease that he is investigating. A knowledge of the patient's constitution, based on his record, is the peculiar privilege and possession of the family practitioner who takes full advantage of his opportunities. Living in the society of his patients, born and bred as he may have been in their midst, he knows, or he ought to know, the conditions of inheritance and life, good and bad, under which their constitutional resistance to acute disease has been and is being shaped. If he has made proper use of this opportunity the family practitioner is in as good a position as the most skilled pathologist to give an opinion on the prospect of successful resistance—that is, of recovery—in a case of typhoid fever or of pulmonary tuberculosis.

OTHER CAUSES AND DISEASES THAN ACUTE INFECTIONS.

Let me now take another step forward, and remind you that the acute infections are but one of the many kinds of pathogenetic agents. The countless influences around us, intimately associated with our daily life, constitute a group of possible causes of disorder and disease almost too familiar to receive attention from the modern pathologist, occupied with the investigation of micro-organisms. To the practitioner of Medicine, in the routine of his daily work, these and the respective and relative modes of their incidence and actions on the body are of equal or even greater moment, and from him they are receiving more and more attention. I refer to our manner and habits of living; the amount and pressure of our occupations; the forms and seasons of our occasional relaxations; our pleasures and amusements; the condition of the atmosphere in which we work; our food and the associated luxuries of alcohol and tobacco; simple physical stresses, whether in labour or in sport; the animals and plants with which we are commonly associated—common media of transference of disease; climate and weather; and the many influences known as "nervous," which fall upon the brain in education, in business, and in the social and domestic spheres, which are intimately bound up with our personal happiness, and which may produce intellectual and emotional strain, anxiety, grief, and other unfavourable effects. And doubtless there are other causes of disease at work in our midst still to be discovered. It was not until a few years ago that the pathogenetic properties of germs were known. Consider what the state of etiology, pathology, and medicine as a whole would be to-day if this portion of what

is now common knowledge had been overlooked. How long was not the mosquito unsuspected, the rat, the bug, the flea, the common house-fly? The search in this direction is being steadily pursued in the spirit of patient enthusiasm and hopefulness that stimulated and sustained Pasteur. If you seek for evidence of that pursuit and of that spirit you have only to turn to the work that is being done in Tropical Medicine, where a very romance of pathology is being daily unfolded.

Side by side with these agents we have the common or everyday disorders and diseases, more numerous than the infectious, many of them as often fatal as the other class, although unrecorded in the published weekly death-rate; many of them also productive of disablement or at least of relative disability, or in the young insidiously ruining the constitution; all of them fruitful sources of indisposition, suffering, and waste of work, and time and means, and therefore the common concern of Medicine and the State. Such are, for example, gastric catarrh, gastric and duodenal ulcer, appendicitis, gall-stones, hepatic cirrhosis, emphysema, asthma, gout in its many forms, obesity, arterial sclerosis and Bright's disease, with their intimate associates separately named, including angina pectoris, apoplexy, uræmia; and such are the almost countless disorders of the different systems—the nervous system more especially—which I need not attempt to enumerate. Here is a list of but a few of the more familiar cases with which we meet in practice, and the causes of which it is as important—as necessary—to discover and understand and appreciate, in themselves and in the manner of their incidence on the body, as the causes of the acute febrile processes.

THE PRACTITIONER AS A NATURALIST.

Is it possible to trace what I have called common diseases to the common influences around us with scientific correctness? It is most difficult to say how far each of these influences acts directly, how far indirectly or incidentally only—that is, by interfering with resistance on the one hand, or by assisting essential causes on the other hand, as we saw in our consideration of acute specific diseases. The problem of the causation of many of the common diseases, when it comes to be faced practically, proves to be one of extreme complexity. It is rendered still more complex and difficult by the fact that the same influence may in one instance be an essential cause, in another instance an incidental circumstance only. A high atmospheric temperature is the essential cause of heat-stroke, but on the same day it acts as an incidental precipitating circumstance only of cholera infantum by favouring the development of a specific bacterion in milk. Extreme cold is the specific cause of frost-bite and of death from exposure, but far more often it contributes to disease by incidentally depressing bodily resistance. This complexity of the causation of disease is so great that it might well discourage attempts to disentangle the different elements of it in the routine examination and treatment of our patients. Taken together, the three factors concerned in the production of disease constitute nothing less than the total relations of the individual and of the community to their environment. But if Medicine is to attain success as a genuine art—that is, as a pursuit that aims at doing the very best in the very best way—we must make an attempt to discover each element and to give it its proper weight. Here we have found a great opportunity, each of us individually as extensive as our practice, and all of us collectively as a profession, of advancing Medicine; and here as much as in connexion with the acute infections, the active pursuit of etiology is to be seen which characterises present-day Medicine. Let me try to impress upon you the consideration that here the practitioner has the field in great measure to himself. He is prepared to seek the assistance of the pathologist when it is calculated to be useful, but in the great majority of cases the inquiry rests with himself, since the causes of which he is in search are other than micro-organisms, and indeed are not always material. The immense extent of the field of observation and inquiry does not discourage him, but the reverse. The practitioner has come to make it the first step of the diagnosis of his cases to search for the cause of the disease in every instance. He divests his mind for the time of the traditional or authoritative names or labels attached to diseases, and approaches each case in the spirit of a naturalist. Acute tonsillitis is no longer a single disease for him. He is not satisfied until he has determined by bacteriological examination which of the common infections is at work. He knows that sore-throat is but a manifestation of the place of entrance of a specific organism into the blood. His way of regarding many of the common affections of the bowel has now come to be in respect of the kind and activity of the bacteria, normal and abnormal, that flourish within it; and on this consideration he bases his views of auto-intoxication, and his use of certain diets and intestinal antiseptics and purgatives. When he meets with a case of gall-stones, and plans preventive measures, he starts from purely etiological considerations—the cure and prevention of chronic biliary catarrhs in which bacteria flourish. Diabetes is to the practitioner not a hard-and-fast disease, but a disorder which he tries in each instance to refer to some part or other of the absorbent and assimilative systems in which a particular ferment or enzyme has failed. A case which a few years ago he would have been satisfied to call "pyelitis"—using a purely anatomical term—he now investigates forthwith by searching for the bacillus coli, or for the tubercle bacillus, or for other organism. A case of hæmaturia, with fever and dropsy, is not nowadays regarded offhand as "acute nephritis," and nothing more done in the way of diagnosis: the observant physician is aware that these are but phenomena due to the passage from the body by the kidneys of the pneumococcus, the typhoid bacillus, or other specific organism which he may not yet be able to differentiate more closely than the germ of "septicæmia" or of "infective endocarditis." Consider how bacteriological examination of the sputum has furnished a "ready" method of diagnosis of diseases of the lungs and pleura, acute and chronic—a method only too "ready," indeed, for us to regard it as a sufficient guide to prognosis and treatment. If we turn to diseases of the heart, and the present-day study of the more common kinds and form of them for practical purposes, do we not find that the consideration which chiefly guides our prognosis and treatment is their origin: whether valvular disease is a result of rheumatism, or of syphilis, or of mechanical stress; whether the "fatty heart" of former days is not degeneration due to alcohol, or to gout, or to sedentary living; whether the "idiopathic enlargement" of the last generation is not a mechanical and physiological outcome of the abuse of athletics? When we meet with aortic aneurysm, do not our thoughts travel at once to the spirochæta pallida, and from it to the physical stress that completed the damage of the aortic coats which it infests? What are tabes dorsalis and general paralysis, and a multitude of other forms of nervous affections which were formerly regarded as independent diseases, but acknowledged manifestations of the actions of a single cause—syphilis and its products? The name "anæmia," useful enough as a title, now conveys to our minds an idea that prompts us to examine the mouth for sepsis, and to ascertain the condition of the alimentary canal, of the genito-urinary organs, and, indeed, of all the mucous surfaces. A complaint of headache in a child at school at once suggests an examination of the eyes. And when a youth of poor physique and constitution is brought to us our minds turn naturally to want of physical exercise and other unwholesome influences under which he has been reared in a town.

In these instances, which are but illustrative instances, and I believe I may say in most of our professional work, we appreciate the line of the principal and most promising advance at the present time, as compared with earlier but still comparatively recent periods. Physical examination, which was developed so remarkably in the first half of the last century, is still being advanced, particularly in the direction of exactness, by means of apparatus and the introduction of skiagraphy. Clinical chemistry also has been and is being steadily improved and extended. By these and other means, including examination of the blood, the actual pathological condition of affected parts can be investigated with far greater accuracy than before. But we do not rest now at this stage, which might be called the "anatomical" stage, of diagnosis. We are not satisfied until we have pressed our inquiry a stage deeper, and done our best to discover in what the anatomical change of the affected organ originated. The minds of the profession will not rest until the cause of cancer has been found.

VARIOUS INFLUENCES AFFECTING COURSE, PROGNOSIS, AND TREATMENT.

From this somewhat lengthy discussion of the three orders of influences concerned in the causation of disease let me pass on to consider how its course may be shaped by influences of the same orders respectively, particularly by those influences which I have called incidental.

When we commence practice, inspired by the study of pathology, we are all disposed to regard illness, a disease in progress under our observation, as a manifestation of the actions of the essential cause of it only—of the tubercle bacillus, for example, of alcohol, of the spirochæta of syphilis. It is not long before we come to recognise abundant evidences of spontaneous relief, repair and recovery, in the symptoms of the case, just as we recognise natural resistance in the origin of it. But it may require years of intelligent observation and consideration on our part to enable us to realise how large a part is played in every illness by altogether casual conditions and events.

A considerable proportion of the so-called "symptoms" of a disease are not strictly phenomena of the morbid process itself—that is, are not present in every instance of it—but are manifestations of some passing influence. The same remark applies to the phases of an illness, known as complications, relapse, and recurrence: they may usually be referred to extrinsic disturbances, possibly insignificant enough in themselves, which have afforded the essential cause—infective or not—a fresh opportunity to display its action. The food or feeding, the patient's room, his nurse, his relatives about him, the state of his bowels, the provision for sleep, rest and occupation of mind, fatigue, a passing chill, and surely the medicinal treatment as well,—all these are as much influences in determining the course of his case as was the original cause of it. There is no better test of a good practitioner than the possession and exercise of a faculty of observing and judging with correctness the effects of these incidental circumstances on the patient. The experienced doctor, as contrasted with the beginner fresh from hospital, knows that every passing event affects the case for good or for bad, and he never fails to give it its proper value in estimating the condition and prospects of his patient. He knows that by keeping critical watch and firm control on the patient's surroundings he may be able to modify favourably the progress of a case that appears altogether unpromising when regarded solely from the side of its essential nature. He has learned that it is with a patient, not with a disease, that he is concerned; with a process, not with a lesion. An attack of paroxysmal dyspnœa in the course of chronic Bright's disease he does not interpret as directly due to increase of the renal lesions in degree or in extent, but to careless indulgence on the part of the patient in meat or wine. He is prepared to find that return of pyrexia during convalescence from typhoid fever has been caused by a visit from friends, and is not a true relapse from re-infection. And it is because of his experience of the actions of extrinsic incidental influences in modifying the course of disease that the practitioner cautions the subjects of chronic quiescent appendicitis and chronic dysentery against exposure to cold and wet and fatigue.

This consideration helps us to realise the bearing of the circumstances and events of our patient's life upon prognosis and treatment. In estimating the future we direct our attention to the diseased or damaged organ, but by no means to it alone. We ascertain and consider as correctly as we can the conditions under which his life will be spent, knowing that these will in great measure determine the course and termination of his case. As the prognosis of acute disease is largely based on the patient's past and on his present state, so the prognosis of a case of chronic disease is in practice mainly an intelligent forecast of the circumstances under which the subject of it will live. Take as an instance a case of valvular disease of the heart in a patient of 15. We are expected to foretell the patient's future; in particular what is to be expected of him in respect of capacity for work and the value of his life in terms of years. In framing our estimate of the patient's prospects we naturally take into account the form, situation and severity of the valvular lesion and the condition of the cardiac walls—all purely anatomical elements of prognostic value. But experience has taught us that a score of patients starting on equal terms in this respect, at the age of 15, have many different futures before them; and this not because of the actual disablement of the heart, which is the same in all, but because of the different influences which will fall upon the respective individuals. If we are to give useful advice to the boy with aortic disease, we must project our view of his case into the next ten years, and picture our patient surrounded by companions devoted to games and exercise in every form; and we estimate as nearly as we can the control of the lad's disposition in that direction that can be exercised over him. Next we anticipate the importance on the duration of his life of the choice he may make of a profession—laborious or sedentary, full of nervous stress or the reverse; for on this in great measure will depend the maintenance of cardiac compensation. We see him during the same period of early manhood exposed to the familiar temptations of social life, with alcohol, syphilis, and the other elements of irregular conduct and habits all ready to fall upon the damaged heart unfavourably. A little later we know that his reserve of strength will be tested by the concerns of his professional and domestic life, as well as by the many sources of anxiety in connexion with his home and with making sufficient provision for his family. And when the question of the actuarial value of the patient's life is put to us—that is, in respect of the prospect of his survival to middle age and beyond it—our principal prognostic consideration relates to the position which the man will have won for himself by that period of his life, the conditions under which he may be expected to be working, the habits which from his present disposition, and judged by his inheritance, breeding and upbringing, he will probably have developed, and the liability to early degeneration which may be learned in part from his family history.

This is but an illustrative statement, but it may serve to bring home to our minds the extent as well as the character of the interest that attaches to prognosis when it is based on an appreciation of something more than the findings of the post-mortem room and even the symptoms and signs present in our patient. The different influences that will surround our patient, and will tell on him for good or for evil, are forecasted, and, let me add, forestalled, if possible, for in the proper appreciation of the prognostic conclusion lies the opportunity as well as occasion for preventive treatment. And this, let me repeat, is what the best type of family doctor understands and practises, passing his days amongst his patients, whose careers he helps to shape and to guide and to control by advice, by encouragement, by warning, by reproof if necessary, as well as by means of dieting and drugs.

THE PROFESSION AND THE PUBLIC.

Thus the practitioner of to-day has come to concern himself more and more with the constitutional soundness as well as with the present health of the persons under his care, and with the whole environment in which they live. One of the principal demands made on Medicine in these days is for an opinion—not in the individual case only, but in respect also of the community and the race—on the effect for good or for evil of modern civilisation, as it may be studied and ought to be modelled, especially in our great cities. Even if the stimulus of the recent successes in general etiology and pathology, which I have attempted to put on record to-day, had been wanting, the force of public opinion at the present time would itself move the profession to search for the relations between disease and the common circumstances of the life of the people. Neglect of physical culture, overpressure in education, the wear and tear of professional and commercial life, insufficient attention to the nourishment and care as a whole of children, intemperance and debauchery, and the insanitary and otherwise unwholesome conditions in which the community often have to live and work, as their parents lived and worked—these, in their bearings on disease and degeneration, have come prominently to the front in connexion with eugenics, and, indeed, with many of the political controversies of the present hour. A cry has been raised, and is loud and clamant in this country, that we are the victims of modern civilisation, which penalises health and soundness; that the nation is degenerating; that the environment is ruining our constitutions. The practitioner of Medicine is expected to extend his active interest in health and disease, and in the influences that determine them respectively, beyond the strictly professional field. He is required to ascertain and to furnish for public

information in the public service the materials of which our sanitary laws and regulations may be constructed.

In conclusion, let me say that I shall not consider that I have been justified in my selection of the subject of this Address, nor that I have done justice to it, unless I have convinced you that, much as has been done in the past, satisfactory as is the position that has been reached by Medicine in its progress along the line of investigation of causes of disease, much, far more, remains to be accomplished, and that a great part of it is waiting to be done by the family practitioner. Conviction of the importance of etiology must carry with it a sense of duty. We must not rest content with mutual congratulations on past achievements. There cannot but be many influences around us unfavourable to health and life remaining to be discovered by patient inquiry and observation. No doubt causes of disease lie concealed in many common things, and are associated with many common events. There is a natural disposition at the present time to leave investigation of this character to the bacteriologist. This is altogether unfair to him. I have already asked you to consider that it is unreasonable to expect the pathologist in his laboratory to solve other than certain classes of etiological problems. The remainder rests with ourselves. General practice is the most fruitful and promising field for the study of the natural history of disease in the living body. We who deal directly and immediately with the individual and with the community have opportunities which must not be neglected. What is more, we have that particular kind of opportunity which the scientist eagerly desires to command. We can vary the circumstances of our people's lives in the direction of improvement, and watch the experiment, and carry out a strictly scientific observation whilst effecting real personal and public benefit. And, over and above all this, who but the family practitioner can find and furnish the material from which the great problem of inheritance in relation to the causation of disease is to be solved? The student of eugenics collects such material laboriously, and laboriously works out results. The practitioner studies not the dead figures but the living individuals in action. He sees the delicate, the unsound, the drunkard, marry. He brings into the world children born of such parents. He has medical charge of the new generation throughout the earlier years at least of its precarious existence, and is often in a position to observe the event in its full development. Opportunities like these of connecting influences, direct and indirect, personal and inherited, with results, are afforded him only too abundantly throughout the community in which his practice lies.

THE BRITISH MEDICAL ASSOCIATION.

Besides employing individual opportunity and individual effort we may, and we do, advance this work collectively. The profession occupies a position, has contracted responsibilities, and acquired an influence in the country vital to the highest interests of the country. The British Medical Association as a body has never ceased to prove its concern for the national health and soundness and has done its full share in discovering and dealing with the causes that underlie the inefficiency and degeneration of portions of the people. It employs the exceptional advantages afforded by its organisation in the promotion of this object. We have a Standing Committee on Public Health. At the annual meetings, as on the present occasion, there is a Section of State Medicine. Every question, every public movement, bearing on the subject of the health of the people, is examined closely in the *Journal*. By these means and otherwise the Association takes an active interest in the pressing social problems of the time. I need mention only the medical examination and care of school children, physical training, the use and abuse of athletics, temperance, mental stress in education and in daily work, and the public provision of regular and sufficient relaxation and wholesome amusements for the people. Several of my predecessors in the honourable office which I occupy to-day have delivered themselves of clear and striking opinions on one or other of these subjects.

Thus, in the objects and achievements of our Association itself we see at work the spirit of the Medicine of to-day which I have attempted to unveil to you in this address. Surely it is a spirit that is worthy of encouragement and support, whether it possess and move those of our number who devote so much of their time and powers to the organisation and administration of this great Association, the enthusiastic pathologist in his laboratory, the physician in the wards, or the laborious practitioner in the remotest corner of the country or of the colonies.

Address in Surgery
ON
MALIGNANT DISEASE.

Delivered at the Seventy-eighth Annual Meeting of the British Medical Association

BY H. GILBERT BARLING, M.B. LOND., F.R.C.S. ENG.,

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MR. PRESIDENT,—My first duty to-day is to tender to the Council of the British Medical Association my thanks for the honour conferred on me by the invitation to give the Address in Surgery at this great meeting in the metropolis of the empire. I should indeed be vain did I not realise that the Council by their invitation desire to honour not myself as an individual but rather the good work done by provincial men in advancing the science and art of surgery, a generous recognition for which I desire on behalf of my colleagues to express grateful appreciation. That I personally should have been chosen instead of others far abler for the duty imposed upon me is due, I feel, to the accident that I practise in the Midlands, the nursery in which this Association was born.

When one's mind is roving over the field of surgery, after the manner of those in labour with such a task as mine, naturally the first thing one has to grapple with is the difficulty of choosing a subject suitable for such an occasion as this. We have a gathering composed only in part of those who confine themselves to the practice of surgery, and largely of others occupied in different fields of special or general medical work. Under these circumstances it appears to me desirable to take some subject of general interest and deal with it in broad outline. Such a subject I hope I have found in Malignant Disease.

The great era founded on the genius of Pasteur and Lister, which has robbed surgery of so many of its anxieties and terrors, which has enlarged and illuminated our work in all directions, has extended its splendid influence over our knowledge and treatment of malignant disease. The revelation of bacterial and allied infections as the cause of so many diseases inspired the hope—indeed, I may say the expectation—that the origin of cancer would soon be laid bare. The veil is still unrent, the secret is yet hidden, and the world waits with painful interest for the revelations of the future. But whilst we realise our ignorance of the absolute cause, we must appreciate that our knowledge, of the processes of malignant disease, of the struggle, of the living organism against it, and of the means by which we may relieve or cure cancer, has advanced and is advancing in a most hopeful manner. Our position to-day is in marked contrast to that which obtained a comparatively few years ago; then the predominant view was that cancer was a systemic disease, of which the tumour was the local manifestation, and removal of the evident growth was rarely regarded as anything more than palliative. This conception of the nature of cancer provided a disastrous example of the influence of bad theory on practice. It led in most cases to totally inadequate removal of the disease, the speedy return of which *in loco* was held to substantiate the belief that it was due to a blood dyscrasia. By clinical observation, by patient pathological investigation, and, more recently, by laborious observation and experiment on some of the lower animals, we have obtained, and are still obtaining, knowledge which is pregnant with power and which is far in advance of that in the hands of our immediate predecessors. We can only fully appreciate this when we review our position from the three sides—experimental, pathological, and clinical. In the time at my disposal I cannot hope to deal

exhaustively with the huge field open to me, but must be content to address myself to three main considerations. Briefly, these are—(1) What experiment has taught us as to the growth of transplanted carcinoma and the methods by which immunity can be conferred on inoculated animals; (2) our knowledge of resistance to malignant disease in the human subject; (3) the means available for its successful treatment.

RESULTS OF EXPERIMENTAL INVESTIGATIONS.

Appeal to experiment has given information to be obtained in no other way; interrogation of living tissues had become essential to supplement our knowledge of the mere histology of malignant structures, and incidentally has provided interesting parallels between the results of experiment and conditions exhibited in the human tissues. Experimental observations have been carried on in all civilised countries, but nowhere with greater ingenuity, or with more scientific acumen than by workers under the Imperial Cancer Research Fund in this country. To the director of that research, Dr. Bashford, and to his colleagues, I should like to express my feelings of indebtedness and appreciation.

Let us first consider what we know of the growth of cancer. If portions of a carcinoma from one mouse are grafted into several other mice of a similar strain, a certain number of these grafts, but not all, develop and form malignant growths indistinguishable from the primary tumour, and will eventually determine the death of the inoculated animals. If the growth of these new tumours be investigated from day to day several points can be clearly shown. First, that the tiny nodule introduced grows by multiplication of its own epithelium and not by conversion of the cells of the host into carcinoma cells. Whilst the epithelial cells introduced are the source from which all others are formed, the part played by the tissues of the receiving host is of the utmost importance. The inoculated fragment consists of epithelium supported by a varying stroma of connective tissue, the two being blended in different proportions and on different patterns, producing carcinomas of varying type as we find in human beings. The fate of the epithelial cells I have already mentioned. What happens to the connective tissue of the stroma? It degenerates, dies, is removed by phagocytosis, and is replaced by proliferation from the connective tissue cells of the host, which new tissue speedily becomes vascularised, and so provides the intruded epithelium with nutrition. If this new production of stroma from the host does not occur, the epithelial cells die and the inoculation of cancer fails. Thus we learn that experimental carcinoma is a parasite, the essential element the epithelium, living its own life and using its host as a provider of nutrition through the new stroma and its accompanying blood-vessels. But we learn also that, not content with exciting a production of new stroma and blood-vessels to supply its needs, the epithelial cell so impresses the tissues in which it is implanted that a stroma is produced exactly similar to the stroma in the primary growth, be it of great amount or little, be it of one pattern or another. If the stroma of the primary tumour be highly vascular, so that the growth is of the hæmorrhagic type, this will be exactly reproduced by successful inoculation.

The interest of the experimental observations I have just related, intrinsically great as it is, is enhanced when we recall that this parasitism and this almost fastidious production of the new stroma finds a parallel in human pathology. In one of the most remarkable tumours of the human subject, chorion-epithelioma, we have an example of parasitism almost experimental in its nature. Chorionic epithelium derived from the tissues of the fertilised ovum—that is, from a new generation—grows into and transplants itself into the tissues of the mother, a being of a preceding generation. The primary growth in the uterus, and its metastases scattered widely by the blood stream through the body, determine the death of the host which the parasitic tumour has invaded. In the ordinary metastases of malignant tumours we have a process closely resembling that of experimental transference, particles of the primary growth swept into the lymph or blood stream, carried by one of these to any or all parts of the body and producing exact facsimiles in the metastases. If the primary tumour is a columnar-celled carcinoma of the intestine a replica of it may be produced in the brain, or if an ossified spindle-celled sarcoma of the femur, an exact bony reproduction of it may be grafted in the heart.

If the experiment of transplanting carcinoma from one mouse to another be repeated sufficiently often another phenomenon may arise—a no less remarkable occurrence than the production of a new form of malignant growth, namely, sarcoma, which develops side by side with and is closely blended with the introduced carcinoma. When this curious observation was first described close criticism was naturally directed to it; the result was attributed to careless experiment, to the introduction of a mixed tumour into the new host, to confusion between malignant growth and the infective granulomata. The experimental production of sarcoma has now, however, been repeated so often and by such critical investigators that we must absolutely accept the fact of its occurrence. When a portion of carcinoma is transplanted the only tissue in it which survives is the epithelial cell, and we are driven irresistibly to the conclusion that the cell itself, or something contained within it, possesses such properties as to induce a malignant growth of different nature, of a new type, derived from the connective tissues amongst which the graft lies. Only very exceptionally is sarcoma thus produced, and this suggests that the connective tissues are not easily provoked to malignant growth, an observation which is in accord with clinical experience. Not only may sarcoma be produced by experimental transference of a pure carcinoma, but if the tumour of mixed strains be in turn transplanted the carcinomatous element may die out and a pure sarcoma eventually be propagated, or the sarcoma may prove the more aggressive of the two, as shown by its invasion and destruction of the carcinomatous tissue. An added interest is provided by the occasional occurrence in the human subject of mixed malignant growths—that is, sarcoma and carcinoma occurring in the same part or organ. A few such have now been placed on record, and they have this in common with the experimental mixed growths—that the sarcomatous element may prove the more active and malignant of the two, as shown by its invasion and eventual destruction of the associated carcinoma.

Mr. President, in my earlier remarks I pointed out that experimental inoculation in some mice failed, although the animals were under exactly the same conditions as their fellows in which success was attained. We naturally inquire what this failure means, and from the experience of various investigators it seems possible only to attribute it to higher resistance on the part of certain mice or, to put it in other words, to a degree of natural immunity. This being recognised, experiments were devised to determine if this natural resistance could be increased with the ever-present hope of being able to throw light on the problem of treatment in cancer of human beings. The results of these experiments show clearly that it is possible to increase the resistance to inoculation of malignant growths in mice and allied species. By repeatedly inoculating mice with a particular tumour a very high degree of immunity to that tumour can be attained, but this immunity does not apply to other malignant growths, at all events, in the same degree. Protection against inoculation may also be provided by other materials than those derived from malignant tumours—for example, by a mixture of tissues such as an emulsion of mice embryos or, better still, by using an emulsion of the skin of mice embryos or emulsion of spleen, both of which appear to give a high degree of protection, or by using blood, the active powers of which have been shown to reside in the corpuscles and not in the serum.

When we scan these experimental results closely it is evident that protection can be given only within narrow limits. The tissues used must be derived from the same species, or at least from those very closely allied; so with the blood—blood from the rat or rabbit does not protect mice. Again, the highest degree of protection is provided from tissues of a similar histogenesis—as, for instance, an emulsion of mouse skin provides the maximum immunity to inoculation of squamous-celled carcinoma in the mouse. In the endeavour to learn what produces immunity minute investigation has been made of the changes which occur in and around the grafted material, and though some of the details are still in dispute the following appear to be the essential points. Similar changes in the immune and in the normal mouse can be traced up to a certain time, that is, about the third day. In each case there is degeneration of the introduced stroma, and some necrosis of the central area of epithelium. Two views have been advanced as to what

happens in the immune later than about the third day. According to the one, we find failure in the production of the new stroma and its accompanying capillaries, and, according to the other, a new vascularised stroma does form. But whichever view is correct—and possibly both are in varying degrees of immunity—a few days later still a well-marked reaction is established in the adjacent connective tissues. These tissues become infiltrated by young cells which surround, penetrate, and eventually strangle the implanted graft. This reaction of the areolar tissue, with the formation of scar tissue which destroys the implanted epithelium, is similar to the changes produced by the exposure of transplanted growths to the action of radium, to which I will refer later. It is also comparable to the destruction of cancerous emboli in blood-vessels owing to the formation of scar tissue by proliferation from the endothelium, a process which has been observed not only in the lower animals but also in man. By whatever means immunity is induced, at the end of about two or three weeks the graft has disappeared by the activity of phagocytes.

Immunisation by radium has at this time a special interest and needs rather fuller consideration. If a portion of mouse carcinoma be exposed to the action of radium for a period insufficient to produce any structural change, gross or microscopic, and this fragment be subsequently inoculated into other mice, the inoculation fails, no growth takes place. The same result may be obtained in other ways, as, for instance, by breaking up the fragment of growth in a mortar or by exposing it to a temperature of 98·6° F. for 24 hours. In mouse carcinoma which has been already established by inoculation exposure to radium causes some of the tumours to disappear, others continue to develop normally, and a few, perhaps, flourish more actively. Sections taken from the disappearing tumours may show hæmorrhage where the radium had exercised its influence, but the most noticeable change is an active proliferation of the connective tissues, especially at the margin, and an invasion of the parenchyma of the tumours by young fibroblasts. As these complete their development they contract on, strangle, and destroy the epithelial cells they embrace. We have no evidence here of a direct specific effect on the epithelium of the growth which is found to be still actively proliferating. Some experimental observations made for me by Mr. Percival Mills show that similar changes may be induced by exposing the liver of a healthy mouse to the action of radium. The liver cells, as the carcinoma epithelial cells, undergo slight changes, which disappear in a comparatively short time. The connective tissue round the vessels and the endothelium of the vessels show marked activity and proliferation, which remain long after the hepatic cells have returned to their normal condition. We have, then, after the application of radium to implanted carcinoma only a formation of scar tissue, such as may be observed in human lymphatics and blood-vessels invaded by cancerous epithelium, and such as is seen in mice, in whom immunity to inoculation has been induced. Further experiments with radium have shown that cure of an inoculated growth exposed to its rays gives immunity to subsequent inoculations of carcinoma similar to that which is obtained from treatment with blood, skin, or other tissues. This immunity is not confined to the particular area involved by the tumour, but extends to the whole body. The quality of immunity thus induced may have its value in increasing the resistance of the body when once a process of cicatrisation of a malignant growth has been set up in the human tissues by treatment with radium.

Immunity in general terms may be ascribed either to failure on the part of the introduced epithelium to produce its specific action on the living tissues in which it is embedded, or to a change in the connective tissues, which now fail to respond, owing to the action of the immunising agent. This quality of immunity to inoculation has not been transmitted by heredity—the mice born of parents rendered immune are as liable to successful inoculation as are other mice—the mother mouse does not convey any protection through her milk to her offspring—no anti-cancerous serum can be obtained from the immunised animal.

As part of the whole picture I wish to place before you, I have endeavoured briefly to concentrate attention on some of the more important conclusions derived from the interrogation of living tissues by experiment on animals. Experiment has told us much of the growth of cancer, and of the means by which inoculated tumours may be inhibited and cured, but it has nothing yet to tell us of the origin of cancer.

HUMAN RESISTANCE TO MALIGNANT DISEASE.

I would now turn to the second part of my theme, from experimental to pathological and clinical knowledge, both of which afford evidence of the struggle in the human subject between the tissues of the host and the parasite cancer. It is perhaps not clearly recognised that such a struggle exists; the tendency is rather to look upon cancer as a constantly progressive disease, neither halting nor wavering in its course. But there is evidence, both pathological and clinical, that the tissues do resist, that between them and the disease is a real struggle which occasionally ends in spontaneous cure. Striking evidence of this is afforded in the process of lymphatic permeation and subsequent lymphatic fibrosis, graphically described and illustrated by Handley in carcinoma of the breast and elsewhere. The tendency of breast cancer is to spread centrifugally from the primary growth into the lymphatics of the deep fascia around. The cancerous epithelium is observed pushing its way into the lymphatic vessels and extending more or less radially along them, not probably from any inherent attraction by those vessels, but because it finds in them the lines of least resistance. This is lymphatic permeation. With the growth of the epithelium the lymphatic becomes more and more distended until its walls rupture; a little hæmorrhage may occur, and some reaction of the surrounding tissue. As a result fibrous tissue is produced, contraction follows, and the cancerous epithelium is strangled. This is lymphatic fibrosis. Unfortunately, whilst this reparative process is occurring at one part, with resulting formation of a mere fibrous thread, the distal point of the invading epithelium is thrusting still further along the lymphatic, and we have the picture of active invasion at the periphery, with recession and recovery at the proximal part of the lymphatic vessel. Similar resistance may be found in the blood-vessels when cancerous particles become embolised into them, as is most easily demonstrated in the lungs. There tiny emboli may be found free in the blood stream or enclosed in a thrombus, which in part or entirely occludes the vessel. From the intima young connective tissue develops, which surrounds the thrombus, penetrates it, and, finally contracting, destroys the cancerous epithelium, remnants of which may in places be found in the thrombotic mass. Occasionally one of the cancer emboli may survive and grow through the vessel wall into the lung tissue around, producing there a metastasis; but this appears to be quite exceptional. Very large numbers of partially destroyed cancer emboli may be found in lungs when no metastasis visible to the naked eye can be discovered, and a perusal of M. B. Schmidt's work on this subject leads to the conclusion that this destruction of cancer emboli is not a mere accident, not an occasional happening, but a frequent occurrence, multitudes of metastases being thus cut short and prevented. Observations on mouse cancer have shown a similar secluding and destructive process inside the blood-vessels of the lung, another illustration of the close similarity between the processes found in man and those produced experimentally in animals. What a curious comment on the old idea of cancer as a blood disease is provided by the destruction of cancer emboli in the blood-vessels owing to the endothelial reaction set up by their presence! Or, again, by the immunity against successful cancer inoculation conferred by the injection of blood into a mouse.

The facts just related, together with the blood and lymph vascular arrangements in malignant tumours and the post-mortem findings in patients dead of these diseases, point clearly to the prevention of a large proportion of possible secondary malignant formations owing to the failure of particles separated from the primary tumour to graft themselves on to the tissues in which they are eventually stranded. Did this destruction not occur metastatic formations would be found earlier and in much greater profusion than post-mortem records show in the large majority of cases.

As we pass from microscopic to clinical evidence, we find resistance to cancer quite as clearly shown. Who amongst

us has not felt sore disappointment at the ultimate recurrence of disease in a patient who by lapse of time, say from three to ten years, has been regarded as cured by operative measures. Some of these late recurrences may be examples of the development of new and entirely independent growths, but this explanation will not apply to others. The locality of the late development, the position it occupies with regard to the operation wound, the microscopic examination of the recurrence, practically leave no doubt as to the relationship between the original tumour and the cruelly disappointing appearance of the sequel. It is hardly possible to avoid the conclusion that minute foci of cancerous growths may lie latent in the tissues for long periods, not dying out entirely, not developing until favourable conditions arise of the nature of which we are at present ignorant. The most striking example of latency in my own experience was provided by a patient whose breast and axillary lymphatic tissue had been removed for carcinoma. Many years of freedom from recurrence appeared to give absolute security; yet 11 years after the operation, when the patient was in advanced age, she returned to show me a mass of carcinomatous glands, some below, others above, the clavicle. The patient was certainly free from evident gland infection at my last examination six years previously, and entertained no doubt as to the development of the gland mischief as late as ten years subsequent to her operation. The only possible explanation of such late recurrence appears to lie in a struggle between minute particles of cancer left at the operation and the tissues in which they are implanted. Resistance is sufficient to prevent development, but not to destroy the minute cancerous focus. Since cancer cells can thus be held in check for years, finally to become active, their eventual destruction in other and more fortunate cases is, to say the least, highly probable. I might, if time allowed, amplify the evidence of resistance to malignant growth by referring to the repair of spontaneous fracture in bones the seat of metastases, or to the disappearance of pressure symptoms when the spinal cord is involved by secondary growths, and so on; but this would not really carry the argument much farther. I suppose that everyone who has closely observed the progress of malignant tumours has been struck by variations in the rate of development, at one time rapid, at another slow, the growth receding in one place, advancing in another.

If the evidence of struggle between the human host and cancer were to end here, the story would indeed have a disappointing conclusion, as we should have to acknowledge final defeat. Happily we can carry the matter further and are able to claim an occasional victory on the part of the tissues over cancer. The occurrence of spontaneous recovery is perhaps oftener cited than verified, but after the most rigid scrutiny not a few cases remain which appear to be conclusive. If we submit these to analysis one of the most striking results is the frequency of recovery in chorion-epithelioma. This tumour is as intensely malignant as any which affects human beings; it may produce extensive local infiltration and widespread secondary growths, it may destroy life in a few months. If we examine the records of chorion-epithelioma reported to have recovered they appear to satisfy every requirement: portions of the growth were examined microscopically by competent observers, incomplete removal of the primary manifestation was acknowledged, the clinical evidence of secondary formations in the lungs was complete as shown by physical signs, by hæmoptysis, and by dyspnœa. Yet spontaneous restoration to vigorous health followed with complete and prolonged absence of all signs of growth either in the primary or the secondary localities. Speculation on the cause of spontaneous recovery from chorion-epithelioma inevitably recalls to one's mind that it is really an implanted cancer and not one arising primarily in the maternal tissues. It provides, therefore, a parallel to inoculated cancer in mice, which in not a few cases may grow for a time and then disappear without treatment of any kind, whereas spontaneous recovery in mice the subject of carcinoma arising *de novo* is very rare.

Perhaps no more interesting example of apparent spontaneous recovery from cancer is recorded than the classic case observed by Pearce Gould. A woman with recurrent breast cancer, extensive gland infection, nodules in the skin, growth in one femur with spontaneous fracture, and signs of growth in the chest, reduced to death's door by her disease, is found four years later to have lost all signs of malignant growth save shortening of her femur from the spontaneous fracture. Similar examples of complete recovery are recorded of malignant growths in the abdomen and other parts, but I must not trespass on your indulgence by referring to them in detail.

I would rather draw your attention to a very interesting question relating to patients who show high resistance to, and more or less spontaneous recovery from, carcinoma—this is, Have they acquired an immunising power capable of being transferred to others the subject of cancer? This point, as far as I know, was first raised by Hodenpyl of New York, whose untimely death we have to deplore. He had under observation a patient the subject of carcinoma of the breast with extensive secondary formations. All the lesions disappeared spontaneously, and at the end of four years an extensive chyliform ascites alone remained. Hodenpyl hoped to find in the body fluids of this patient an immunising agent transferable to other human beings. The ascitic fluid was first used experimentally on mice, in which inoculated tumours are reported to have disappeared under the influence of the treatment. This led to the tentative use of the same fluid in carcinoma of the human subject, and a preliminary report speaks hopefully of the results attained. The full report will be awaited with interest, but one obvious criticism can hardly fail to be made. Experimental immunity has so far been obtained within very narrow limits, and the alleged successful treatment of mouse carcinoma by a fluid from the human subject appears to contradict practically all that has been hitherto demonstrated with regard to experimental immunity.

Of the absolute nature of the resistance to malignant disease at present we know little if anything. We cannot recognise the factor which heightens or lowers it, whether it be a chemical variation in the tissues or an influence produced through the nervous system, stress or anxiety perhaps exaggerating or exaltation diminishing the activity of the growth.

I think, however, we can recognise one striking feature in the destruction of the cancerous epithelium which is common to the experimental production of immunity, to the disappearance of growths under radium, to spontaneous recessive processes in the human body. This is the active part played by the connective tissues; we have an irritative overgrowth, with hyperplasia and subsequent contraction, which appears to determine the death of the epithelial cell.

TREATMENT OF MALIGNANT DISEASE.

I turn now to the third part of my subject, and trust, Mr. President, that I shall be pardoned for the demands I have made on the attention of the meeting in thus dwelling on experimental and natural processes in cancer. A just recognition of these appears essential for a sound judgment on the value of our methods of treatment and equally of importance in guiding us to future advances.

When considering the means available for the cure or the amelioration of malignant growths, certain modes of treatment by cancer serums, by drugs, and by enzymes may be disregarded as futile. The X rays have a real field of usefulness in relieving pain, in reducing the activity of inoperable growths, in healing rodent ulcers if we are justified in including these amongst malignant formations. When, however, we examine the absolute curative value of this method of treatment disappointment awaits us; personally I have never known an unequivocal malignant growth absolutely disappear under the influence of X rays, though apparently others have occasionally been more fortunate.

Turning to another side of radio-therapy as provided by radium, it is necessary to speak haltingly, to avoid too enthusiastic hopefulness on the one hand, on the other too niggardly an acknowledgment of what radium as yet appears to have effected. We may clear the ground somewhat by immediately accepting radium as curative in rodent ulcer, with this reservation, that the permanence of cure must be certified by longer period of time than has yet elapsed in most of the cases treated. This reservation is absolutely necessary from our experience of late relapse after what has appeared to be cure by excision. If we scrutinize the results of treating growths which are undoubtedly malignant, as shown by progressive local invasion and by secondary formations in lymphatic glands or other parts, we

find much that is promising but little that is conclusive. A profound impression is produced in many instances; malignant tumours of large extent and depth may disappear or much diminish. But the improvement and the apparent recovery are apt to be deceptive, and subsequent return of the growth which progresses to the death of the patient appears to be a not infrequent experience. Further, instead of recession a more rapid evolution of the growth with generalisation is not unknown. The difficulties in the way of treating malignant formations by radium are only truly appreciated when we recall the life-history and the methods by which malignant tumours invade local and distant parts. How can we with present methods hope to pursue these successfully with radium? If a patient is the subject of an inoperable tumour we are grateful for the benefit radium may give in the relief of pain, in the cessation of discharge, in the cicatrisation of an open sore, and we should rejoice if cure seems probable. But when called upon to treat patients with operable malignant growths, are we justified in advancing radium as a substitute for excision? Personally, I would not at present take this responsibility. My main objection to the use of radium, even tentatively in such cases, is the constant danger of lymphatic and vascular dissemination which may occur in the period occupied by the treatment. My conclusion would for the present limit radium to the treatment of the least hopeful conditions until much wider experience has been obtained. I believe this will be best in the interest of our patients. It would also be of advantage, for the present, if treatment by radium were left in the hands of the few rather than the many. The cost of a really useful supply of the material, the uncertainty at present of the best methods of application, the real possibilities of doing harm as well as good, all combine to enforce the wisdom of this course. To those who have the means and opportunity I would appeal for the fullest information possible. We need to know their final as well as their immediate results; we want such a description of the minute anatomy of the growth itself and of any secondary infections, together with illustrations if possible, as will leave no doubt in the minds of others as to the nature of the disease treated.

A brief time must be given to consideration of the treatment advocated by Dr. W. B. Coley, especially for sarcoma. His method was based on observation of the occasional cure of ulcerated malignant tumours by an attack of erysipelas. From this Coley has evolved his treatment by the toxins of the streptococcus of erysipelas, intensified by an addition of toxins derived from the micrococcus prodigiosus. I suppose that many of us have administered Coley's fluid during the last few years. Personally, I must confess to having done so in a rather half-hearted way, but Dr. Coley's recent visit to this country, and an opportunity of personal discussion with him, stimulated me to further interest in the matter, and for the past few months I have given his most recent preparation of the toxins a fairly extensive trial, mainly for inoperable sarcoma. Those who have read Dr. Coley's communications and have met him personally will, I am sure, agree with me in regarding him as absolutely honest in the presentment of his case, but the use of the mixed toxins in this country has not given such results as those attained by the originator of the treatment. Cure of sarcoma is occasionally recorded, the microscopic and clinical evidence being such as to demonstrate the malignant nature of the growth, but I am bound to say that such experience as I have made, whilst partially substantiating, does not yet fully confirm the optimistic views presented by Dr. Coley. I have used the toxins prepared under his directions and have endeavoured faithfully to follow his instructions for its use. As far as my observations go no harm has befallen any of the patients treated, though the treatment makes considerable demands on their courage and persistence. In the majority of my cases no improvement has been effected, but in others I can speak of improvement which promises cure if further lapse of time confirms the results at present attained. With such experience as I have made, I could not advise any patient with an operable sarcoma to adopt Coley's treatment, and I would dissuade him from it as a substitute for operation; but if operation were refused, or the growth were inoperable, I would certainly advise the use of the toxins, with the expectation that some patients would be greatly benefited, though at present I am unable to discriminate and say which will benefit and which will not.

With every desire to use all means available which may relieve patients of the distress, anxiety, and possible mutilation which operation inflicts, with the belief that time will provide happier and gentler means than we now possess, I am compelled to say that at the moment we have to rely upon operative measures as the great remedy for malignant disease. Our limitations may be frankly acknowledged. Sometimes owing to inaccessibility, at others to the vital nature of the parts involved, often because of the fact that malignant disease is essentially the disease of advancing age, we are powerless, and sorrowfully have to recognise our impotence. But when all this is accepted a great and expanding field is open to the surgeon. What are the results to which we can point? These may be considered, as they concern the patient's life, and as they promise cure of the disease. First, owing to the teaching of Lister and the constant improvement in technique, the mortality following operation in almost every region of the body has been, and is being, reduced in the most substantial degree. If we consider as an example the removal of the cancerous breast, which we may take as a type of the modern operation for cancer, what do we find? With the very extensive removals now effected a mortality which ought not to be higher than 2 to 3 per cent., and has been by some operators reduced materially below this. If we consider the mortality after removal of carcinoma of the tongue, of the intestine or stomach, or after amputation of the extremities for sarcoma, we find a parallel reduction.

But what concerns us most closely is this—if the patient survives operation has he a fair prospect of being permanently relieved of his disease? Without relying upon Volkmann's teaching, that three years' freedom from recurrence implies cure, we may recognise the infrequency of later return of the disease, and, if we assign five years as the period after which recurrence very rarely takes place, we may absolutely accept the curability of cancer by operation. In cancer of the breast there is ample evidence of the truth of this statement, not from the results of one but from those of many operators, some of whom can show that from 40 to 50 per cent. of the cases submitted to operation are cured. The results are not so satisfactory in other regions. If we take, for instance, cancer of the rectum, cure may be attained in a ratio of from 20 to 40 per cent., varying with the experience of the operator and the care with which he selects cases suitable for excision. Unfortunately, only a small proportion of the cases of carcinoma of the rectum is suitable for excision; the large majority at present can only be treated by palliative measures. In epithelioma of the tongue the results are not so good, though a much larger proportion of the cases is submitted to operation.

One could pursue this possibility of cure in practically every region of the body, but I am here only concerned to show in a general way that cure can be effected by operation—a fact not yet, I believe, so fully accepted as it should be by the members of our own profession, and certainly not by the public at large. This at once raises the question, If cure is attained in some cases, why not in many or in all? What are the factors responsible for failure? Or, to put the question in another way, What are the resources we may adopt to better our present results? We need an increased knowledge of the life-history of the various forms of malignant growth and the exact method of extension of each in the various regions of the body. Thus we shall learn whether gland infection is early or late, on which groups of lymphatics to concentrate our attention, which tissues in the locality of the growth must be most widely extirpated. We need also to make our operations as thorough as the conditions permit. Only one real opportunity of cure is offered—it is at the first operation, and this should be pressed to its fullest extent. For instance, in carcinoma of the breast a palliative operation may occasionally be performed for an ulcerated or bleeding growth, but with this exception nothing excuses, in an otherwise healthy patient, a mere excision of the breast for carcinoma without simultaneous extirpation of the lymphatic area which has been shown to be specially liable to invasion. Amputation of the tongue, even in the earliest stage of epithelioma, without extirpation of the appropriate gland area, either at the time or immediately after, is a dereliction of a plain duty. Amputation at the shoulder-joint for a sarcoma high up the humerus, instead of an interscapulo-thoracic amputation, is a positive invitation to local recurrence.

But when we have learnt all that there is to know of the

life-history and extension of malignant growths, when we have adapted our operative measures to the most thorough extirpation possible, we still have left a third factor, more important than either in its bearing on the cure of cancer—early recognition of the disease. In that direction is our great hope for the future. In the earlier stages, before it has interfered with the functions of organs, cancer is generally a silent disease. This is at present our genuine excuse for failure to recognise the disease at its beginning, but the excuse often does not apply. Who amongst the operating surgeons here to-day has not frequently to deplore the time wasted between the first observation of a suspicious symptom—swelling or ulcer—and the removal of the disease, which has been postponed to a time when the expectation of cure is reduced to shadowy proportions. The responsibility for delay falls partly upon us as a profession—we are not penetrated by the firm belief, the certain knowledge, that cancer is curable by operation, and that the early and not the later stages of the disease provide the great opportunity. We fail to urge special methods of investigation by instruments of precision, by radiography, by exploratory incision, or even by prophylactic excision. The responsibility for delay is, however, only partly ours. The public, in dread of a diagnosis of disease for which they still think there is no real remedy, often conceal their fears and their disease until what they dread has come about—a stage of malignant growth almost or quite hopeless of cure. Or, in ignorance of the great benefit which surgery can confer on them, they submit themselves to vampires, who prey upon their credulity, and exploit them in the most cruel manner.

Nothing is more mortifying to the surgeon than to find, after the successful local extirpation of the disease, that his patient is doomed by secondary growths in other parts of the body. Take, as examples, two very diverse conditions—epithelioma of the tongue and periosteal sarcoma of the femur. In the first case the patient remains free of disease in the mouth, to die from gland invasion in the neck; in the second the amputation flaps are free from recurrence, but the patient dies from secondary growths in the lung. The explanation is, of course, the same in both cases—surgical interference has arrived too late. A few months, a few weeks, or even a few days earlier, the secondary invasion might have been anticipated, and a successful local removal converted into a complete and permanent cure of the disease.

I believe it is literally true that if all malignant growths could be excised at a certain stage in their development all could be cured. I have mentioned our great difficulties in the pursuit of this counsel of perfection. For the sake of our suffering race we pray, we hope, that our present limitations will be removed, that means for interrogating the body as to the presence of malignant disease in its early stage will be provided by the ever-increasing band of devoted workers in biological chemistry. Finally, we look forward to a time when the distress and anxiety inflicted by resort to operative measures may be substituted by gentler means provided by the sciences of biology, physics, and chemistry, to which we owe an ever-increasing debt of gratitude.

THE PATHOLOGY OF PROSTATIC ENLARGEMENT.

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THE very multiplicity and diversity of the theories offered in explanation of the pathology of prostatic enlargement are sufficient in themselves to indicate that its etiology is not yet satisfactorily accounted for. The principal views may be grouped under the following headings: gonorrhœal infection; catarrh; secondary sexual changes; neoplasms. But I venture to assert that every surgeon of experience sees too many exceptions to each of these views to be able to accept any one of them as a sufficient cause for this common complaint, met with in all sorts and conditions of men, rich and poor, strong and weak, saint and libertine alike.

Watson and Cunningham, in their important work on the genito-urinary system, say: "Among the many theories advanced to explain the occurrence of senile enlargement of the prostate gland, the only one that can be said to bear close scrutiny, and that is common to all cases, is that of age." But this is not an explanation of the cause of prostatic enlargement. It is one of the facts associated with it. Age *per se* cannot cause it, because the great majority of old men escape it altogether. The opinion most generally accepted is undoubtedly that the enlargement is due to a neoplasm. As Adami puts it: "Hypertrophy of the prostate takes two forms, the most common being perhaps a condition of multiple fibro-myoma, analogous to the fibroids of the uterus, and a more diffuse glandular or adenomatous overgrowth. ..... Probably the myomatous form, if not the adenomatous enlargement, is a true tumour." If we put the adenomatous type as the more frequent, in place of the fibro-muscular, and as the more probable form to be truly neoplastic, this would, I believe, represent the views of most recent writers.

But really the theory that prostatic hypertrophy is a true tumour will not bear scrutiny. Especially in the fibrous variety it is clear that the entire gland is usually involved from the first, the disease affecting it as a whole more after the manner of a chronic inflammatory change; whilst in the adenomatous kind the gland is also generally involved, though the greater part of the enlargement is accounted for by isolated adenomatous overgrowths. There is no essential difference between the two forms. In each there is the same chronic change in the gland, though in one we have the addition of the enucleable adenomatous tumours. Therefore in prostatic hypertrophy we recognise two special pathological processes: (1) a chronic change in the gland, and (2) the presence of enucleable tumours. I regard the second process as a sequence and the first as the essential condition. The enucleable tumours may be, and possibly they are, truly neoplastic; but they are the consequence, and not the cause, of the affection. Multiple adenoma is met with in other glands as well as the prostate, especially the breast and the thyroid; but in my experience they always appear to be secondary to some general change—in the breast to chronic mastitis and in the thyroid to parenchymatous goitre. The very fact that multiple adenomata are present in a gland always suggests, to my mind, that the gland itself was primarily unhealthy.

When examining an enlarged prostate with the microscope it is important to examine especially the tissue between and surrounding the adenomatous growths, as this represents the altered original gland structure. It is too much the practice to have the sections cut from the tumours alone, neglecting the tissue in which they are embedded. The latter consists of altered prostatic gland tissue, in which the principal changes are as follows:—Primarily there is an increased vascularity and leucocytosis, which is accompanied, or shortly followed, by alterations in the stroma and the acini; and according as to whether the energy of the process is expended on the one or the other the variety of hypertrophy is determined. When the stroma is chiefly affected a tough fibrous enlargement results, but when the acini are specially involved cysts and adenomata characterise the hypertrophy.

The stroma is always increased. In the first instance it presents a vascular, swollen appearance, with collections of escaped leucocytes, suggestive of a chronic inflammatory state. All the tissue appears to be too well nourished and in a condition of irritation passing on to overgrowth. In most cases the glandular elements respond to this, and quickly assume the leading rôle; but in some the changes in the acini are limited to a catarrhal process with perhaps a little micro-cystic development, or it may be they are shrunken and compressed. In such the stroma alone accounts for the hypertrophy, and both unstriped muscle and fibrous tissue are in large excess. These prostates do not attain a very great size; but they are tough and hard and are difficult to enucleate.

It is, however, when the gland acini are stimulated to overgrowth that the most remarkable changes occur, and the largest sizes are attained. These changes involve a great increase in the acini, such as can only well be compared with the increase which takes place in a lactating breast. At the same time many of the acini individually enlarge, and the growing epithelium forms budding vegetations into them. Others become cystic, the cysts varying in size, but only rarely attaining a greater diameter than half an inch. Micro-cysts are numerous, some of them being lined with flattened epithelium, whilst in others the cells may be elongated and produce vegetations or intra-cystic growths. The climax of these epithelial changes is to produce isolated tracts of overgrowth which are more or less separable from the rest of the

FIG. 1.

Fibrous hypertrophy of prostate.

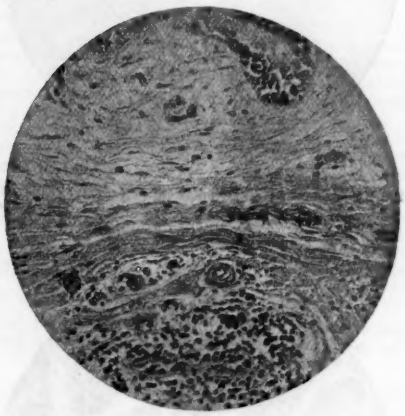
FIG. 2.

Fibrous involution hypertrophy of breast.

FIG. 3.

Irritative changes in prostatic hypertrophy.

FIG. 4.

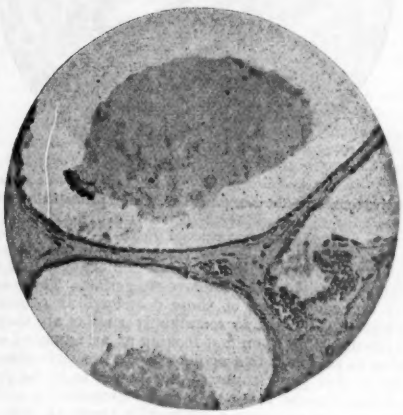


Irritative changes in climacteric breast.

FIG. 5.

Cystic changes with flattening of the epithelium in prostatic hypertrophy.

FIG. 6.



Similar appearances in mammary involution cysts.

structure, and form the enucleable tumours or so-called adenomata.

These processes, however, are essentially different from those concerned with the growth of a true tumour. All neoplasms, innocent or malignant, at first affect only a small local area of tissue. As the former grow they press the normal structures aside and are always at once recognisable as an adventitious growth, the gland itself being unaltered. Here we have a general pathological change affecting the whole organ and rendering every part of it abnormal. Ultimately, as a secondary process, there is usually a typical over-growth of the secreting elements which assumes tumour-like characteristics. I know of only one true parallel to this in human with micro-cysts in the acini. In these cases a tough, hard, fibrous breast results, comparable with the fibro-muscular hypertrophy of the prostate. In other examples every variety of epithelial activity is present, leading to all forms of overgrowth of acini, frequently including carcinoma, and not rarely adenoma. Ever since I first investigated the microscopical changes in chronic involution mastitis, I have recognised the fact that we meet with micro-adenomata in such breasts. It seems to me that while in chronic involution mastitis one sees a change to carcinoma frequently, and to adenoma only occasionally, in the allied prostatic affection a change into carcinoma is occasional, but to adenoma is so frequent as to overshadow the primary condition altogether.

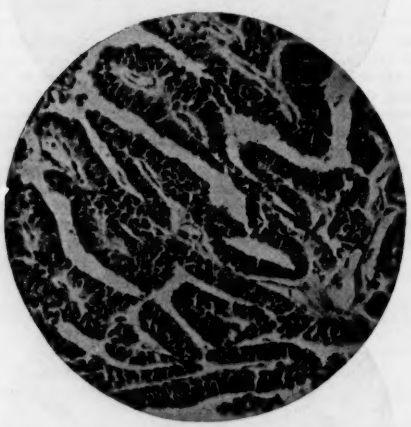
FIG. 7.

Prostatic cysts with hypertrophic epithelium and intra-cystic vegetations.

FIG. 8.

The same in involution mastitis.

FIG. 9.



Excessive cancerous-like overgrowth of acini in prostatic hypertrophy.

FIG. 10.

The same in involution mastitis.

(All the photographs are of the same magnification, ¼ inch.)

pathology and that is in the involution changes met with in the female breast at the climacteric period. These are very nearly the counterpart of those described as occurring in the prostate. Indeed, so remarkably similar are they that I have often hesitated, on first looking at an unnamed section, whether to ascribe it to a mammary or a prostatic change. In the involution hypertrophy of the breast as in the prostate, the initial change is one of increased vascularity and leucocytosis of the supporting connective tissue of the gland, causing general enlargement and induration. In some breasts the hypertrophic process is limited to the connective tissue. Apart from this important clinical difference, I consider the pathological change in each to be essentially of the same nature. How much they resemble each other histologically is at once appreciated if microphotographs are examined of the two affections in their various stages side by side. (See Figs. 1–10.)

The prostate is an elaborate secreting gland consisting of numerous lobules, each possessing its own duct, the general arrangement being not unlike that of the mammary gland. It is highly vascular, and its stroma is characterised by the large amount of unstriped muscle present in it. It secretes a

fluid destined for the nutrition of the spermatozoa, a sort of culture-medium for them. It is a secondary sexual gland, its evolution being absolutely under the control of the testes. This influence is exerted through the effect of the internal secretion of the latter. Before puberty, that is, until the testes are functionally perfect, the prostate continues in its fœtal condition. It then rapidly enlarges and assumes adult proportions. Castration in early youth prevents the prostate from ever attaining maturity. Castration (double) after manhood causes atrophy of the prostate, though not necessarily or even usually of the hypertrophied organ. Any operation or abnormal condition which leads to the atrophy of both testes, such as ligature of the testicular vessels on both sides, or cryptorchidism, is also followed by non-development or atrophy of the prostate; whilst any circumstances which affect only one testicle, or which, like vasectomy, only destroy fertility without influencing the internal secretion, in no way interfere with the normal evolution of the prostate. These facts indicate the close dependence of the prostate upon the testes for its normal physiological activity.

It is a matter of common observation that these organs are equally closely associated in unhealthy states, for chronic prostatitis is the most frequent of all troubles associated with sexual irregularities. Any excessive indulgence is sure to be followed by a sense of weight and aching in the perineum, a full and tender prostate can be felt through the rectum, exquisite pain is caused by the passage of a sound, and threads of catarrhal mucus are seen floating in the urine. The prostate is an organ dominated at all times by the testes. When they are dormant it is dormant; evidenced not only by changes at puberty, but by the seasonal changes in animals which are only sexually active at certain periods of the year. When the testes are normally active the prostate follows suit. When they are abnormally excited it suffers from the excess. Is it not, then, reasonable to look for changes in the prostate as the result of the attainment of the climacteric period in men allied to those which occur in women at that time in organs equally influenced by the internal secretion of the ovaries?

Information relating to the influence exerted by the internal secretion of the ovaries upon the mammary glands is less full and exact than in the case of the testes and the prostate—at least from the physiological standpoint. On the pathological side we have naturally more evidence, since the more ready accessibility of the breasts directs attention to every abnormality in them. There is, however, sufficient for our purpose. The breasts, like the prostate, continue in the fœtal condition until puberty, when they rapidly undergo a marked evolution in the normal female. When the ovaries are removed during childhood the mammary glands never develop. I have not met with a definite statement as to the effect of double ovariotomy upon the breasts in the adult; but from what little I have seen of such cases, it would support the view that atrophy occurs as in the prostate under allied conditions. In the *Practitioner* for 1901 there is a very interesting paper by Dr. W. E. Dixon, from the laboratories of Cambridge University, in which it is clearly shown that the evolution of the mammary glands depends upon the internal secretion of the ovaries, and that the latter exert a direct influence over the former in some way not entirely understood.

The influence of the ovaries upon the breasts is constantly brought under our notice in medical practice. Every year I see a great many cases of chronic mastitis. Clinically I divide these into three classes—infective, irritative, and involution. The chronic infective cases are rare. They are tubercular, septic, or due to syphilis or actinomycosis. The irritative cases occur in women up to 35 years of age. They are secondary to ovarian irritation, and are particularly common in women who take "precautions" against pregnancy. The involution cases are those that are so frequently associated with the climacteric change. Why the mammary glands should undergo such an erratic struggle at this period it is not easy to say; but it is a fact, for we are all very familiar with the abortive evolutionary changes which take place in them as the menstrual function is coming to an end. Perhaps it is not very wonderful that, as the control of the dominant organ weakens, as that internal secretion which has been so potent is withdrawn, these tissues which have been so subservient throw off allegiance, and run riot for a time before merging themselves in a general senile impotence. There are plenty of instances in nature showing the intensity with which every effort towards reproduction is sustained. It is not the multiparous woman, the mother of a dozen children, in whom we usually meet with involution mastitis, but rather in the spinster, or the sterile wife, or those with the smallest families. The microscopical picture in involution mastitis or hypertrophy is constantly that of an abortive lactation. It is a wild effort towards functional activity, a final flare-up preliminary to inevitable decadence.

How similar is the sequence of events in prostatic hypertrophy! Prostate and breast are each secondary sexual glands similarly influenced by the dominant organs as regards their development, their functions, and their health. When the climacteric period arrives each is liable to a peculiar pathological change. The general features of that change are alike in each, though the naked-eye appearances and ultimate evolution may and do present marked differences. As I said at the commencement of this paper, we cannot accept any of the ordinary explanations of the etiology of prostatic enlargement, because we all see so many exceptions to each theory offered; but it seems to me that every detail fits in with the suggestion that it is an involution change, and is in the male the counterpart of involution mastitis in women.

In conclusion, I sum up the points as follows:—1. The accepted theories as to the cause of prostatic hypertrophy all fail because each can only apply to a limited number of cases. 2. The prostate and the breast are both controlled by their respective dominant sexual glands and respond to their influence in a similar way in health and disease. 3 Both organs are subject to a disturbing influence at the climacteric period, which may, and frequently does, result in a hypertrophic change. 4. In such change the microscopical appearances in the two organs show a remarkable resemblance in all essential details. 5. Prostatic hypertrophy, like the mammary involution hypertrophy, occurs only at the climacteric period, whereas there is no known neoplasm which is so strictly limited to an age-period.

For these reasons I consider prostatic hypertrophy is not due to a chronic inflammation of septic or specific type nor to a neoplasm, but that it is an involution change similar in character to that with which we are familiar in the mammary gland.

Liverpool.

HELMINTHIC INFECTION AND ITS RELATION TO EOSINOPHILIA:

A STUDY BASED ON THE EXAMINATION OF THE FÆCES OF 562 CASES AND OF THE BLOOD OF 102 CASES IN SOUTH CHINA.

BY G. DUNCAN WHYTE, M.B., CH.B. EDIN.

THE work on which this study is founded was undertaken in the first place to ascertain whether the Clonorchis sinensis (syn. Opisthorchis sinensis) is or is not responsible for any degree of eosinophilia. As will shortly be explained, it is difficult to secure an adequate number of cases of unmixed infection with this parasite, and in cases of mixed infection it is not possible to determine exactly what proportion of the eosinophilia is to be attributed to each of the parasites present.

The examination of such text-books as were available (Cabot, Coles, and the volume on "Blood" in Nothnagel's System), and numerous books on medical diagnosis, all showed references to intestinal parasites as a cause of eosinophilia, but practically gave no idea as to the average degree of eosinophilia to be expected in various infections. In the medical journals differential blood counts were occasionally given in reports of parasitic infection, but as a rule too few cases were reported upon by any one observer to form an adequate standard for comparison.

In view of the absence of available facts I was compelled to undertake a series of examinations myself, and to compare two series of groups of cases that only differed from one another by Clonorchis sinensis being present in the one series and absent from the other. By this means one was able to show that this parasite has little, if any, influence on the degree of eosinophilia. It was felt that the results of this study might be of interest to others, so the facts, somewhat rearranged, are herewith submitted.

Before giving the tables embodying these results it is

TABLE I.—*No Parasite.*

Years of age.	Affection.	Asc.	Tric.	Ank.	Clon.	W.B.C.	P.	L.	M.	E.	T.	Eosinophiles per c.mm.
							Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	
41	Stop opium.	—	—	—	—	12,000	84·6	11·0	4·0	0·0	0·4	0
55	Dyspepsia.	—	—	—	—	4,600	62·2	29·4	7·0	1·0	0·4	46
43	Fistula in ano.	—	—	—	—	4,800	60·4	31·4	6·6	1·0	0·6	48
50	Entropion.	—	—	—	—	6,000	69·0	19·4	5·6	6·0	0·0	360
42	Dyspepsia.	—	—	—	—	3,850	55·3	34·6	7·0	2·6	0·3	100
21	Anæmia.	—	—	—	—	7,500	60·6	31·6	3·0	4·6	0·0	345
40	,,	—	—	—	—	3,500	62·3	26·6	6·0	4·3	0·6	150
	Average of the seven cases					6,040	65·0	26·3	5·6	2·8	0·3	150

TABLE II.—*One Parasite.*

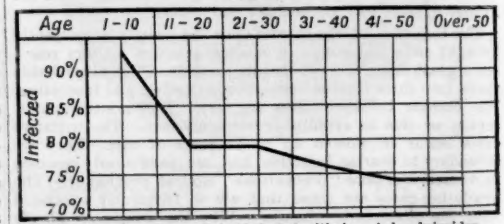
Years of age.	Affection.	Asc.	Tric.	Ank.	Clon.	W.B.C.	P.	L.	M.	E.	T.	Eosinophiles per c.mm.
							Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	
23	Healthy.	—	—	—	P	6,700	54·6	27·0	7·0	11·0	0·4	737·0
40	Phthisis.	—	—	—	P+	4,100	82·8	6·6	8·8	1·4	0·4	57·5
48	Syphilis.	—	—	—	P	10,000	66·8	25·8	3·2	4·2	0·0	420·0
36	Fracture.	—	—	—	P+	8,200	40·0	47·8	6·6	5·4	0·2	442·8
10	Syphilis.	P	—	—	—	18,000	72·6	20·0	6·3	1·0	0·0	180·0
18	Tuberculous hip.	P+	—	—	—	8,600	59·8	28·0	5·6	7·8	0·8	670·0
20	Healthy.	P++	—	—	—	8,200	50·8	36·2	6·4	6·6	0·0	541·0
37	,,	P++	—	—	—	6,600	51·6	43·6	3·6	1·0	0·0	66·0
20	,,	P	—	—	—	16,000	61·0	22·3	8·0	8·6	0·0	1376·0
25	Phthisis.	P++	—	—	—	10,600	65·6	22·6	5·6	6·0	0·0	636·0
48	,,	P++	—	—	—	13,700	75·0	14·6	8·3	2·0	0·0	274·0
16	Healthy.	P+	—	—	—	10,700	50·0	34·6	4·0	11·3	0·0	1269·0
42	,,	P	—	—	—	6,800	61·0	22·0	1·3	15·6	0·0	1060·0
34	,,	P+	—	—	—	4,100	58·0	27·6	4·0	10·3	0·0	422·0
15	Bronchitis.	P+	—	—	—	7,900	40·3	38·3	8·0	13·3	0·0	1051·0
36	Leucoma.	P+	—	—	—	7,400	53·0	34·6	7·0	5·3	0·0	392·0
26	Healthy.	—	P	—	—	5,000	39·4	34·0	9·0	17·2	0·4	860·0
31	Stop opium.	—	P	—	—	11,500	54·6	27·3	8·6	9·3	0·0	1069·0
60	Entropion.	—	P	—	—	3,100	58·3	28·3	3·6	9·6	0·0	297·0
27	Necrosis.	—	—	P	—	15,000	71·3	18·3	5·3	3·3	1·6	495·0
33	Dyspepsia.	—	—	P	—	6,400	53·4	32·2	8·2	6·2	0·0	397·0
26	Anæmia.	—	—	P	—	6,300	46·0	37·0	13·5	3·5	0·0	220·0
36	,,	—	—	P	—	4,500	57·0	26·0	8·6	8·0	0·3	360·0
29	Ankylostomiasis.	—	—	P+	—	9,800	43·0	20·6	10·0	26·0	0·3	2548·0
	Average of the 24 cases					8,700	57·3	28·0	6·5	8·0	0·2	702·0

necessary to say a few words on the marked degree of helminthic infection found amongst the samples of population dealt with. Those examined included hospital patients, medical students, schoolboys, coolies, &c.

In only 2·1 per cent. out of 512 cases examined do the fæces fail to show the ova of one parasite or another. It is probable that this percentage, small though it be, overstates the number of people free from parasitic infection, since parasites may be present, although for any of the three following reasons the eggs are not found: 1. The presence of only male or immature worms. 2. The very small degree of infection. This does not apply to cases of infection with female round worms, in which at least six eggs may be found when only one adult is present; but in the case of Trichocephalus trichiuris and Ankylostoma duodenale a second slide may occasionally show ova where the first failed to do so. Possibly a third slide may show eggs not found in the first two. 3. In the case, at least, of ankylostomes there is occasionally a suspension of conjugation and "egg-production." The degree of infection is shown not only by the smallness of the percentage free from parasites, but also by the large percentage (90 per cent.) in which at least two varieties of parasites were present. Of the farmers 50 per cent. showed simultaneous infection by at least three species of parasite. A note may be added on each of the parasites referred to in the tables.

Ascaris lumbricoides was found in 76 per cent. of the cases, and was equally prevalent among students, merchants, and farmers. The age-incidence is shown in Fig. 1. Reference

FIG. 1.



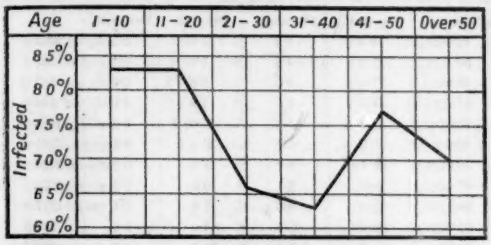
Percentage at each age-period infected with Ascaris lumbricoides.

may be made to the unfertilised egg of the adult female worm. It was found sometimes by itself, and sometimes along with the "ordinary" ascaris egg.

No. of cases with ascaris.	Showing "ordinary" egg only.	Showing unfertilised egg only.	Showing both forms of eggs.
403	42 per cent.	13 per cent.	45 per cent.

Trichocephalus trichiuris (syn. T. dispar) was found in 72·6 per cent. All classes were equally infected by it. The age-incidence is shown in Fig. 2. The relation

FIG. 2.



Percentage at each age-period infected with Trichocephalus trichiuris.

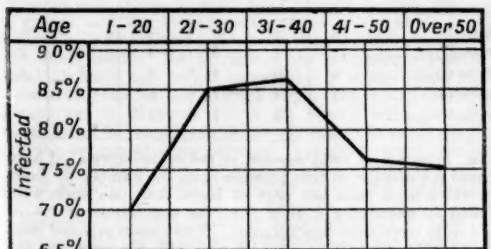
of Trichocephalus trichiuris to appendicitis is a question which is raised from time to time by surgeons and pathologists in different parts of the world. It would be absurd to deny that occasionally the perforation of the mucous membrane of the appendix by this parasite may afford a foothold to pyogenic organisms, but, in view of the wide prevalence of this parasite in South China and the extremely rare occurrence of appendicitis there, it is obvious that these two conditions can only rarely be causally related. Specimens of this parasite were expelled in about 15 per cent. of such cases of ankylostomiasis as were treated with thymol.

Ankylostoma duodenale and *Uncinaria americana*.—One or other of these parasites was found in 60·4 per cent.; both were often present in the same individual. In the following tables no effort has been made to differentiate between infections due to either or to both of these parasites. A most striking fact brought out by these fæcal examinations is the large proportion of farmers infected with this parasite, doubtless due to their working continually with their feet immersed in the mixture of mud and diluted fæces in which rice is grown. It is probably the degree of dilution that saves the farmer from the "ground-itch" which frequently precedes ankylostomiasis in other parts of the world. The prevalence of this parasite among farmers is shown in the following table, in which, by way of contrast, the figures showing infection with Clonorchis sinensis are also given.

Occupation.	Infection with Ankylostoma duodenale.	Infection with Clonorchis sinensis.
Leisure	45·6 per cent.	42·1 per cent.
Miscellaneous ...	53·3 ,,	40·0 ,,
Business	57·7 ,,	40·0 ,,
Artisans	66·6 ,,	11·0 ,,
Farmers	74·5 ,,	13·8 ,,
Burden-bearers	76·2 ,,	0·0 ,,

The age-incidence is shown in Fig. 3. The average amount of hæmoglobin shown by patients suffering from ankylostomiasis was 43 per cent., the figures ranging from 25 to 60 per cent. As evidence of the fact that one may have infection with ankylostomes without "ankylostomiasis," it may be noted that several infected cases had from 70 to 90 per cent. hæmoglobin; this may be compared with Leonard Rogers's statement that 60 per cent. hæmoglobin may be considered a normal standard for the vegetarian natives of tropical climates.

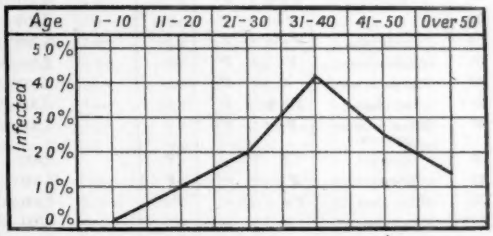
FIG. 3.



Percentage of farmers at different age-periods infected with Ankylostoma duodenale or Uncinaria americana.

Clonorchis sinensis.—This parasite was found in 16 per cent. out of 267 cases examined at Chao-chow-fu, but only in 2 out of 295 cases in the hospital at Suabue, of which I was subsequently in charge. Both these cases were imported from the Chao-chow region. The natives of both regions have the same dietetic and other habits. The occupation incidence has already been dealt with; the age-incidence amongst non-farmers is shown in Fig. 4.

FIG. 4.



Percentage of non-farmers in the Chao-chow region infected with Clonorchis sinensis.

In the accompanying tables, P in any column represents from 1 to 10 eggs of that parasite found in the examination of a layer of diluted fæces covered by a 1½ inch by 1 inch cover-slip; P+ from 11 to 60 eggs; and P++ more than 60 eggs. It is obvious that no approach to scientific accuracy can be made by the examination of an unmeasured quantity of fæces diluted to an undetermined extent; but it is equally obvious that such a statement as "The presence of 50 ankylostome eggs per c.mm. was found to correspond to an infection with 200 worms," while doubtless true of one particular patient on a specified diet, would not be true, even of the same individual, if fed on a diet that left a greater or less bulk of unabsorbed residue. A more accurate result might be obtained if the motion were weighed, and the eggs enumerated in a definite fraction of this weight, but even then fallacies would occur owing to the non-uniform admixture of eggs with the remaining constituents, and to other obvious causes.

As regards that part of the accompanying tables dealing with the state of the blood, little explanation is required. A Thoma-Zeiss hæmocytometer was used, 1 part blood being diluted with 99 parts of an acetic acid solution of methyl violet. With the help of an Ehrlich's eye-piece the slide was examined till an area representing 6000 small squares had been dealt with. About half these enumerations were made by my assistant, Kuan Hien-Theng, who also prepared and stained most of the films. The remaining enumerations and all the differential counts—based on the examination of 300 or 500 cells—were made by myself, thus eliminating errors due to different personal equations. The simplest and most elementary classification of leucocytes has been used in these counts, because their object was not a detailed examination of the blood but simply a study of eosinophilia. For further simplification "transitionals" have frequently been included under "mononuclear." Various factors are liable to minimise the value of a study of eosinophilia, but as these have recently been dealt with elsewhere[1] further reference need not be made to them in this article.

Conclusions.

In conclusion, let us look at the influence of various conditions upon the degree of eosinophilia.

1. *Influence of number of varieties of parasite.*—As one advances from table to table the percentage of eosinophile

[1] Filarial Periodicity and its Association with Eosinophilia, by G. Duncan Whyte, Journal of Tropical Medicine, June 15th, 1909.

TABLE III.—*Two Parasites.*

Years of age	Affection.	Asc.	Tric.	Ank.	Clon.	W.B.C.	P.	L.	M.	E.	T.	Eosinophiles per c.mm.
							Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	
44	Entropion.	—	P	—	P	11,800	41·0	38·4	6·8	13·6	0·2	1604·0
24	Healthy.	—	P	—	P	7,200	69·8	21·0	4·8	4·4	0·0	316·8
46	Entropion.	P+	—	—	P+	6,200	58·6	27·2	5·0	8·6	0·6	533·0
25	Healthy.	P+	—	—	P+	11,400	53·2	34·2	5·0	7·4	0·2	844·0
25	Hæmorrhoids.	P+	—	—	P+	10,800	50·0	32·6	5·6	11·6	0·2	1253·0
15	Healthy.	P	P	—	—	15,800	46·0	28·2	5·2	20·2	0·4	3191·6
17	Leg ulcer.	P	P+	—	—	16,600	39·0	41·4	6·6	12·8	0·2	2124·8
36	Entropion.	P+	P	—	—	12,200	67·0	18·4	5·4	9·0	0·2	1098·0
17	Fracture.	P	P	—	—	8,200	66·8	21·2	6·0	5·6	0·4	517·0
30	Syphilis.	P+	P	—	—	7,200	67·0	20·0	5·0	7·0	1·0	504·0
48	Healthy.	P++	P	—	—	16,800	48·0	34·0	7·0	11·0	0·0	548·0
15	,,	P+	P	—	—	9,000	40·0	41·6	6·6	11·6	0·0	1044·0
15	Dyspepsia.	P++	P	—	—	15,700	39·6	41·0	4·6	14·1	0·0	2292·0
56	Entropion.	P+	P	—	—	8,600	66·3	25·6	3·6	4·3	0·0	370·0
43	Fistula in ano.	P	P	—	—	8,900	59·6	32·6	2·3	5·3	0·0	472·0
24	Leg ulcer.	P++	P	—	—	6,300	44·0	44·0	3·0	9·0	0·0	567·0
48	Mitral incompetence.	P+	P+	—	—	7,500	78·0	17·3	2·3	2·3	0·0	173·0
30	Anæmia.	P	—	P	—	8,800	44·8	43·0	8·8	3·2	0·2	282·0
13	Keratitis.	P+	—	P	—	16,000	47·5	31·3	4·5	16·7	0·0	2680·0
30	Leg ulcer.	P++	—	P+	—	7,800	52·0	20·0	5·3	22·3	0·3	1583·0
39	Leg ulcer.	P	—	P+	—	6,000	51·0	22·0	7·3	19·0	0·6	1140·0
39	Syphilis.	P	—	P+	—	6,200	51·6	26·0	7·0	15·0	0·6	930·0
28	Ankylostomiasis.	P++	—	P+	—	9,800	58·3	24·3	5·6	11·3	0·3	1007·0
23	Bronchitis.	P+	—	P	—	9,100	53·0	25·0	8·8	13·3	0·3	1210·0
32	Phthisis.	P++	—	P	—	15,600	70·0	16·6	10·6	2·6	0·0	406·0
29	Anæmia.	P+	—	P	—	3,400	57·6	36·3	3·3	2·6	0·0	88·0
33	Leg ulcer.	P	—	P	—	4,950	57·6	29·6	3·6	9·0	0·0	446·0
48	Entropion.	—	P+	P+	—	7,500	78·0	17·3	2·3	2·3	0·0	173·0
51	Entropion.	—	P	P	—	7,600	65·0	22·6	4·8	7·2	0·4	547·0
27	Anæmia.	—	P	P+	—	4,700	42·4	33·6	8·4	15·2	0·4	714·0
34	,,	—	P	P	—	4,400	43·6	26·0	8·6	21·8	0·0	959·0
40	Leg ulcer.	—	P	P	—	12,000	60·3	27·6	5·6	6·0	0·3	720·0
28	,,	—	P	P	—	10,100	40·0	38·6	4·6	16·6	0·0	1677·0
34	Aortic stenosis.	—	P	P	—	4,000	49·0	36·0	7·0	7·0	1·0	280·0
36	Healthy.	—	P	P	—	12,500	53·0	30·6	6·0	10·3	0·0	1288·0
48	Fracture.	—	P	P	—	5,200	69·0	21·6	2·6	6·6	0·0	343·0
22	Healthy.	—	P	P	—	10,500	31·3	30·3	3·3	35·0	0·0	3675·0
	Average of the 37 cases					9,360	54·2	29·2	5·6	10·8	0·2	1068·0

cells, as well as the number of such cells per cubic millimetre, progressively increases. This is well shown in Fig. 5.

FIG. 5.

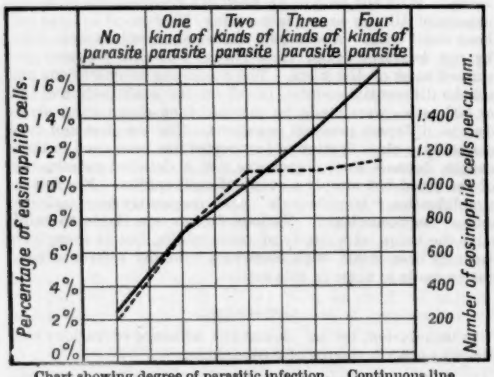


Chart showing degree of parasitic infection. Continuous line shows percentage of eosinophile cells; dotted line shows number of eosinophiles per cubic millimetre.

If one distrusts the value of the "average" as given in the tables and in Fig. 5. the following table may be studied. In this the cases from each table have been arranged into groups according to the degree of eosinophilia manifested. The group containing the largest number of cases from each table has been indicated in each instance, so that one can see at a glance that the progressive rise in the average does not depend on the chance occurrence of a few extraordinary cases, but upon an increasing frequency of moderately higher degree of eosinophilia.

—	0·0–3·3 per cent.	3·4–6·6 per cent.	6·7–9·9 per cent.	10·0–13·3 per cent.	13·4–16·6 per cent.	Over 16·6 per cent.
Table I.	4	3	—	—	—	—
Table II.	5	7	5	4	1	2
Table III.	5	6	8	7	5	6
Table IV.	1	4	7	5	3	6
Table V.	—	2	1	1	1	3

2. *Influence of total number of individual worms.*—I have based my opinion on this question upon the number of cases in which more than ten eggs of more than one worm were found in examining a slide (i.e., the occurrence of P+ or P++ in more than one column). These cases selected from each table showed on the average 119 per cent. of the average eosinophilia for the whole table. On the other hand, those cases in each table which had only P or not more than

TABLE IV.—*Three Parasites.*

Years of age.	Affection.	Asc.	Tric.	Ank.	Clon.	W.B.C.	P.	L.	M.	E.	T.	Eosinophiles. per c.mm.
							Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	
27	Dyspepsia.	P+	P	—	P	10,200	73·2	17·2	4·6	4·4	0·6	449
16	Entropion.	P+	P	—	P	11,200	44·6	45·2	6·4	3·6	0·2	403
28	Corneal ulcer.	P++	P	—	P	8,200	63·0	22·8	5·4	8·4	0·4	689
35	Phthisis.	P++	P	—	P	10,800	70·8	19·6	7·8	1·0	0·8	108
35	Syphilis.	P+	P	—	P+	8,800	63·6	23·2	4·8	8·4	0·0	739
27	Healthy.	P	—	P	P+	8,000	44·0	40·0	6·0	10·0	0·0	800
45	Necrosis.	—	P	P	P	5,800	74·8	12·8	5·4	7·0	0·0	406
49	Dysentery.	—	P	P+	P	8,100	61·0	26·8	5·0	7·0	0·2	567
41	Healthy.	—	P	P+	P	6,500	46·0	23·8	9·2	20·4	0·6	1326
26	,,	—	P	P	P	10,400	62·6	29·2	2·4	5·4	0·4	562
52	Entropion.	—	P	P+	P	8,800	74·6	14·4	5·4	5·4	0·2	475
5	Catarrh.	P+	P	P	—	7,600	62·0	20·8	5·6	11·6	0·0	882
33	Bronchitis.	P	P+	P	—	6,800	61·8	24·0	7·2	6·8	0·2	462
27	Adenoma.	P+	P	P	—	3,600	63·8	17·8	9·0	9·0	0·4	324
9	Fracture.	P++	P++	P	—	13,600	42·2	43·0	5·6	8·6	0·6	1170
25	Healthy.	P+	P	P	—	9,000	43·2	34·8	6·6	15·2	0·2	1368
24	Dysentery.	P	P	P	—	8,600	64·0	13·2	5·1	17·5	0·2	1505
27	Mitral incompetence.	P	P	P+	—	5,400	48·6	19·0	7·0	25·3	0·0	1368
31	Ankylostomiasis.	P++	P+	P+	—	6,100	53·0	15·6	6·0	25·3	0·0	1543
38	Anæmia.	P+	P	P	—	11,400	59·0	21·3	5·6	14·0	0·0	1596
62	Ankylostomiasis.	P	P	P+	—	12,900	66·6	20·3	2·6	10·3	0·0	1329
30	Leg ulcer.	P+	P	P+	—	5,000	61·3	20·3	5·6	12·6	0·0	630
30	Anæmia.	P+	P	P	—	2,800	37·5	44·5	5·0	13·0	0·0	364
19	Syphilis.	P+	P	P	—	11,500	56·6	18·0	5·6	19·6	0·0	2254
40	Syphilis.	P+	P	P++	—	9,000	56·0	24·3	4·0	15·6	0·0	1404
21	Corneal ulcer.	P+	P	P+	—	8,700	40·8	24·3	7·0	26·4	1·5	2297
	Average of the 26 cases....					8,415	57·5	24·5	5·8	12·0	0·2	963

TABLE V.—*Four Parasites.*

Years of age.	Affection.	Asc.	Tric.	Ank.	Clon.	W.B.C.	P.	L.	M.	E.	T.	Eosinophiles per c.mm.
							Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	
29	Symptoms of gangrene.	P+	P	P	P+	5,000	25·6	19·2	4·8	49·6	0·8	2480
23	Adenoma.	P+	P+	P	P	12,800	82·6	8·0	4·0	5·4	—	691
40	Tuberculous ankle.	P++	P+	P	P	13,200	78·8	10·6	4·2	6·2	0·2	819
19	Fracture.	P++	P+	P	P	5,600	47·0	24·4	6·6	21·6	0·4	1,210
27	Ankylostomiasis.	P+	P+	P++	P	4,600	66·4	16·8	7·0	9·8	—	451
42	Entropion.	P++	P	P	P+	4,000	44·6	32·8	5·8	16·8	—	672
25	Syphilis.	P+	P	P	P	8,900	61·6	23·0	5·0	10·0	0·4	890
44	Chronic rheumatism.	P++	P	P	P	13,800	54·2	26·6	4·4	14·8	—	2,042
	Average of the eight cases					8,500	57·6	20·2	5·2	16·8	0·2	1,157

one P+ or P++ showed only 90 per cent. of the average eosinophilia for the table.

3. *Influence of the age of the individual.*—In studying this question the individuals in each table may be divided into three groups, and the average eosinophilia of the cases in each group may be expressed as a percentage of the average for the whole table. The average of the percentages thus obtained for each age period in each table is as follows: Those over 40 years of age average only 84 per cent.; those below the age of 20 years 103·4 per cent.; while those between 21 and 40 years reach 115·4 per cent. In confirmation of the conclusion thus obtained it may be stated that 80 per cent. of those aged 40 years or over showed a less degree of eosinophilia than the average for the cases in that table.

4. *Influence of tuberculosis.*—In a manner similar to that already explained the eosinophilia of the tuberculous cases in each table is expressed as a percentage of the eosinophilia in the whole table. The tuberculous cases average only 40 per cent.

Summary.

The more varieties of parasite that infest a man, and the more numerous the individuals of each variety, the greater degree of eosinophilia he is likely to show. This will be especially marked if he is between 20 and 40 years of age, and will be less noticeable if he is older or is suffering from some form of tuberculosis.

Explanation of Abbreviations in Tables.

The abbreviations at tops of columns in the tables are explained as follows: Asc.=Ascaris lumbricoides Tric.=Trichocephalus trichiuris. Ank.=Ankylostoma duodenale. Clon.=Clonorchis sinensis. W.B.C.=Number of white blood cells per cubic millimetre. P.=Polymorphonuclear neutrophile cells. L.=Small lymphocyte cells. M=Large lymphocyte cells (mononuclear). E.=Eosinophile cells. T.=Transitional cells. The last column shows the number of eosinophile cells found in 1 cubic millimetre of blood.

A CASE OF VOLVULUS OF THE CÆCUM AND ASCENDING COLON.

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THE rarity of volvulus of the cæcum affords sufficient justification for recording the present case.[1]

The diagnosis is so difficult, without opening the abdomen, that practically it is never made except by operative or by post-mortem inspection. A history of previous constipation and sometimes of previous similar attacks may perhaps be met with, in addition to the vomiting, pain, meteorism, and constipation present, as well as more or less suddenness of onset. But such history and symptoms are found with stricture of the colon and other causes of intestinal obstruction, and even if well-marked early and local meteorism should lead to a strong suspicion of volvulus there is probably no trustworthy means of differentiating between volvulus of the cæcum and the reputedly less rare condition of volvulus of the sigmoid[2]; for the tumour in both cases appears more often in the left than in the right side of the abdomen; both conditions are more common in men than in women; the age incidence alone appears to be somewhat different, volvulus of the sigmoid, according to Sir Frederick Treves,[3] occurring most frequently between the ages of 40 and 60 years, whereas volvulus of the cæcum, according to Mr. Corner and Mr. Sargent,[4] occurs most frequently between the ages of 20 and 40 years, though no decade is exempt. Most cases are fatal within a week, from septic peritonitis and toxæmia, though some have lasted over a fortnight before general peritonitis, usually following gangrene and perforation, has proved fatal.

Volvulus of the cæcum appears, from the descriptions—often meagre—of recorded cases, to occur in several different forms. Perhaps the commonest is that in which the cæcum, together with more or less of the ascending colon, moves across the abdomen in the coronal plane of the body until it reaches the left hypochondrium or, less frequently, the epigastric, the left lumbar, or some other region. The cæcum thus travels in the arc of a circle whose centre is about the middle of the ascending colon, and whose radius is formed by the proximal half of the ascending colon. This movement of the colon is accompanied by some degree of rotation around its own axis, by means of which the anterior surface of the cæcum becomes superior and ultimately posterior. The effect is an acute kinking, with more or less torsion, of the colon, and in some cases also occlusion of the ileo-colic artery and vein, resulting in gangrene of the whole of the affected portion of the bowel.

In other cases the bending of the cæcum, together with some of the proximal portion of the ascending colon, is forwards in the sagittal plane of the body, so that the caput coli comes to lie upside down in the right hypochondriac or in the right lumbar region, its anterior surface becoming posterior. In a third group the twisting takes place round an axis formed by the vessels of the meso-colon, and so a loop becomes strangulated, consisting of the commencement of the large and the termination of the small intestine.

To these three forms of volvulus an abnormally long meso-colon, allowing of more than ordinary mobility of the cæcum, seems to be a necessary precedent condition.

In another group of cases the rotation is around an axis represented by the lumen of the ascending colon without any great movement across the abdomen. The torsion may take place, as in the case now reported,[5] at some part of the ascending colon. It then tends to occlude the right colic artery and vein, as well as the ileo-colic vessels, whilst the termination of the ileum is necessarily carried round the ascending colon, and helps in its strangulation. Or the torsion may take place at the junction of the cæcum with the colon, and in that case there seems to be a tendency for the cæcum, probably being unusually large, to fall into the pelvis.

Lastly, cases are described as being produced by twisting of the cæcum and part of the ascending colon round a coil of small intestine, but in some, at least, of these it is pretty clear that the condition was really (as in the present case) that of twisting of the terminal portion of the ileum round the commencement of the large bowel, a condition that must inevitably be produced where torsion in the axis of the ascending colon progresses to the extent of one complete rotation.

CASE.[6]—A married woman, aged 54 years, was admitted into the Sheffield Royal Hospital at 4 P.M. on Jan. 22nd, 1905.

History.—The patient had been comparatively well until to-day. For a few days she had been somewhat costive, but the bowels had acted each day, with some straining; on one occasion, three days ago, she had to assist defæcation with her fingers. She went to bed last night feeling quite well. She awoke in the morning at 8.30, got out of bed and micturated. On returning to bed she was soon seized with pain in the abdomen about the umbilicus. It was at first intermittent, but afterwards became continuous. At the same time the abdomen began to swell and had continued to do so ever since. The pain grew worse and was much increased by movement. She vomited a little twice in the afternoon—once after taking ground ginger and once after milk. The bowels also acted slightly twice. About 1 P.M. she sent for a medical man and was seen at 3 P.M. by my colleague, Mr. H. Lockwood. His first impression on exposing the abdomen was that the patient was pregnant and near term. On ascertaining her age and the arrival of the menopause he passed a catheter and drew off a few ounces of clear urine. Then, thinking there must be some abdominal catastrophe, such as rupture or torsion of an ovarian cyst, he sent her to the hospital.

Condition on admission.—The patient looked dull and depressed, but had not a typical abdominal face. Tongue dry in the middle, moist and clean at the sides. Pulse 84, respirations 24, temperature 98° F. Heart: apex beat in nipple line, fifth space; faint systolic apex bruit. (She had once been in the hospital, under my colleague, Dr. Arthur Hall, for rheumatic fever.) Lungs: nothing abnormal noted. Abdomen: greatly distended in hypogastric and umbilical regions, extending to left more than to right, looking very much like a seven months pregnancy, but more prominent. (Menstruation ceased four years ago, but for the past few weeks there had been an offensive discharge from the vagina.) At intervals the patient groaned, and then the distended part felt harder, like a tumour, but it was resonant all over. At other times it felt more soft and yielding and was then slightly moveable. There was no visible peristalsis. The recti were somewhat separated. Liver and spleen: not apparently enlarged. Uterus and vagina: the vagina was smooth and the cervix felt to have disappeared and been replaced by a puckered cicatrix. Rectum: a little soft fæcal matter was present.

Diagnosis.—Phantom tumour, due to distension of a portion of bowel by flatus, without organic disease, was suggested, but the greatness of the distension was held to negative such a diagnosis. Physometra, suggested by the abnormal state of the cervix and the history of a foul-smelling vaginal discharge, was not confirmed by any apparent connexion between the cervix and the tumour. Volvulus, probably of the sigmoid, seemed to be the most likely condition, though the absence of absolute constipation was against it. The suddenness of onset, following sudden movement of the body, the high degree of distension, and the physical characters and localisation of the tumour were strongly in its favour.

Treatment.—With the diagnosis of volvulus it was deemed unwise to give a large enema, and immediate laparotomy was advised as the most reasonable means of affording relief or cure. This advice was accepted by the patient and her husband, and about an hour later—viz., at 8.30 P.M.—chloroform was administered. Anæsthesia was not readily induced, the patient struggling and screaming, and then vomiting a little clear fluid. (Her husband afterwards told us that her habits had been very intemperate with regard to alcohol.) When muscular relaxation had occurred, it was found that the tumour was much less prominent than it had been, and that it could be displaced to the right side of the abdomen. A rectal tube was therefore passed, and a little flatus escaped. Before the cutting operation was commenced the face of the patient became grey and she vomited. The pulse and respiration at once stopped and the pupils dilated. Artificial respiration was immediately resorted to and the head lowered, but in spite of such means, together with compression of the heart through the parietes, the patient died. Palpation of the abdomen immediately after death revealed nothing fresh, except the feeling of a band across the right side of the lower abdomen.

Necropsy.—A post-mortem examination was made the next day. The abdomen still presented a resonant tumour in the centre. Larynx and trachea normal. The bronchial tubes contained some mucus but no vomit. Lungs normal. Heart: left ventricle somewhat hypertrophied; atheroma of first part of aortic arch, with patches near the origins of the coronary arteries; valves competent. The pericardium presented some white patches. On opening the abdomen an enormous coil of

[1] In a paper on the subject in the Annals of Surgery (vol. i., 1905, p. 63) Mr. E. M. Corner and Mr. P. W. G. Sargent have collected but 57 cases from literature extending over many years.

[2] Sir Frederick Treves (Intestinal Obstruction, new edition, 1899, p. 7 and p. 135) and most other authorities speak of volvulus of the sigmoid as being the least rare of all the forms of volvulus of the bowel, but Mr. G. H. Makins (THE LANCET, vol. i., 1904, p. 156) states that at St. Thomas's Hospital more cases of volvulus of the cæcum have been met with than of volvulus of the sigmoid, and Fagge (Guy's Hospital Reports, vol. xxix., 1868) found four cases of volvulus of the cæcum and but one of volvulus of the sigmoid in the post-mortem records of 15 years at Guy's Hospital.

[3] Intestinal Obstruction, new edition, 1899, p. 8.

[4] Annals of Surgery, vol. i., 1905, p. 68.

[5] Sir Frederick Treves states (loc. cit., p. 133) that he has met with only one account of a similar case—viz., that reported by Curling (Pathological Society's Transactions, vol. iv., p. 317). Another is reported by Dr. J. Owen (THE LANCET, vol. i., 1886, p. 828).

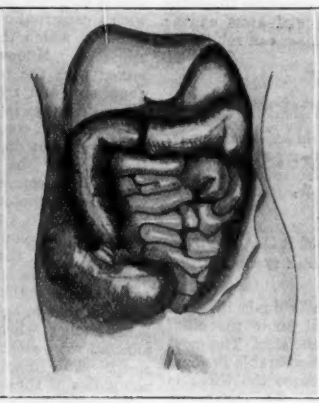
[6] For notes of the case, which I brought before the Sheffield Medico-Chirurgical Society on Feb. 11th, 1905, I am indebted to Mr. Graham S. Simpson, F.R.C.S. Eng., surgeon (at that time house surgeon) to the Sheffield Royal Hospital; for a photograph taken at the necropsy to Dr. W. Harwood Nutt, medical officer in charge of the electrical department, Sheffield Royal Hospital (then house physician); and for the accompanying illustrations to Dr. H. G. M. Henry, assistant physician for out-patients, Sheffield Royal Hospital (then my dresser). The specimen is in the Pathological Museum of the Sheffield University, No. J 21.

black intestine, of most striking appearance, sprang through the incision and seemed to have occupied half the abdominal cavity, mostly on the right side (see Figures). Immediately above it the ascending colon was felt to be closely compressed by an encircling band. There was some blood-stained fluid in the abdomen, but no signs of general peritonitis. On closer examination it was found that the coil consisted of the cæcum and the lower part of the colon twisted completely round (360°) in the direction, viewed from below, of the movement of the hands of a clock. The peritoneal coat and the longitudinal muscular bands were ruptured in several places, but there was no perforation. The appendix, the tip of which was firmly fixed by old adhesions to the parietes external to the cæcum, had naturally followed the twist of the colon, as had also the last part of the ileum, which now lay below, parallel to, and in contact with, the appendix, these two structures forming the constricting band above referred to. They were wound tightly round the colon, above the cæcum, having passed behind it outwards and then forwards, and lastly inwards on to the anterior aspect of the mass. The ascending colon was somewhat dilated and quite black above the volvulus to just beyond the hepatic flexure, but the degree of dilatation was here very much less than below the constricting band. This spreading of the gangrenous process appeared to be due to interference with the blood-supply, the right colic vessels having been compressed or stretched by the twisting of the colon, &c. Similarly, from interference with the circulation in the ileo-colic vessels, the last few inches of the ileum, as well as the appendix, the cæcum, and the lowest part of the ascending colon, were gangrenous, and a coil of ileum just above was in a state bordering upon gangrene. No definite anatomical abnormality was recognised, except the enormous size of the portion of large intestine below the twist. This measured 9 inches in length and 18 inches in greatest circumference. The cæcum when opened was found to contain only a small quantity of solid fæcal matter. The liver weighed 50 ounces and was fatty. Kidneys: right, 5 ounces; left, 6 ounces; the capsule stripped with difficulty, tearing the cortex.

FIG. 1.

Appearance on opening the abdomen.

FIG. 2.

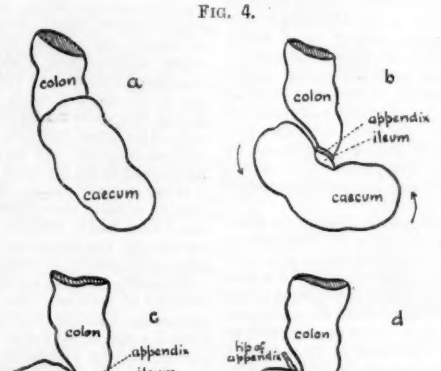


The same, the volvulus being pulled outwards.

FIG. 3.

The same, the volvulus being partly untwisted (180°).

FIG. 4.



Diagrammatic representation of the volvulus and its reduction. *a*, Position on opening abdomen, corresponding to Fig. 1. *b*, Cæcum pulled outwards, corresponding to Fig. 2. *c*, Rotation through 180°, corresponding to Fig. 3. *d*, Rotation through 360° (complete circle). The arrows in *b* and *c* indicate the direction in which untwisting was effected.

The chief factors in the production of volvulus of the cæcum appear to be: 1. Distension of the cæcum and adjoining colon by gas and fæcal matter, owing to impaired peristalsis and other causes. Some portion of the distending viscus must then move from its usual position to find accommodation elsewhere in the abdomen, and the more freely moveable portion will tend to make its way towards the middle of the abdomen, its most yielding region. 2. Movement of the walls of the cæcum by the discharge of fæces through the ileo-cæcal valve. 3. Displacement of the cæcum as by a blow or a fall or by the action of the parietal muscles of the abdomen in any sudden movement of the body, and perhaps also by the emptying of a full bladder. In some instances (4) anatomical peculiarities, such as congenital or acquired malformations and misplacements, which render the cæcum more than normally moveable; and (5) pathological conditions, such as the existence of peritoneal and visceral adhesions. When the twist has once commenced, two other factors may come into play—viz., (6) the closure of the lumen of the adjoining colon resulting from a slight degree of torsion or of kinking, which prevents the forward passage of gas or other contents from the affected part; and (7) the peristaltic action of the terminal portion of the ileum.

In the present case there was no definite evidence of any anatomical peculiarity, but probably all the other six factors were present, including the sudden movement of the body in the patient's jumping out of bed and the emptying of the bladder. The pathological fixation of the tip of the appendix to the outer side of the cæcum probably played an important part in the mechanism, prior to its bringing about compression of the lower part of the colon after the volvulus had developed. By its means and the position of the appendix behind the cæcum, the posterior wall of the cæcum was tethered to the neighbourhood of the crest of the ilium. Increasing distension by gas would then cause the anterior wall of the cæcum to become more and more internal; in other words, a twist, in the direction found, would be begun. The weight of what little fæcal matter was present would tend to prevent any untwisting, even if gas passed onwards. Increasing distension and rotation of the cæcum would soon draw the lower end of the ileum behind the cæcum, and then each peristaltic wave passing down the ileum would tend to push the internal cæcal wall (in contact with it, and now become posterior) still further round in the same direction. Thus the rotation, once commenced, would go on increasing until stopped by the appendix and its mesentery being stretched to the full; and that is exactly the condition in which those structures were found, lying parallel

to the stretched lower end of the ileum, and tightly constricting the twisted colon. Had the tip of the appendix passed to its point of fixation in front of the cæcum, rotation of the latter must have taken place (as in several recorded cases) in the opposite direction.

The operative treatment of volvulus of the cæcum has proved more successful than might have been anticipated, close upon half the recorded cases having recovered. Untwisting, combined with fixation of the cæcum by at least two points to the parietes, is probably the best treatment, where the bowel is in good condition, but it may not be practicable until the viscus has been emptied by an incision, which is then carefully closed again. Excision of the affected parts may be required when gangrene or perforation is actually present, and where these conditions are threatening the temporary formation of an artificial anus at the cæcum may occasionally afford the safest means of relief.

Sheffield.

THE SUCCESSFUL TREATMENT BY COLON LAVATION OF SOME CASES OF ECZEMA, PSORIASIS, URTICARIA, ACNE, AND PRURITUS.

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THERE is ample proof that in some individuals ingested toxins absorbed in the alimentary canal show the chief evidence of that absorption by changes in the skin. The most familiar case we recall and one easily demonstrable in some people is that of urticaria. In this instance the toxin is received from without and introduced into the system by some article of food. But it seems to me probable that urticaria, particularly when chronic, may also be due to auto-intoxication, the result of changes in metabolism of gastric, or more frequently, intestinal origin. Those cases of eczema which have been considered to be associated with gout ("gouty eczema") are likewise caused by a faulty metabolism, if we admit, as most of us do, that the symptom-complex gout is due to a toxæmia of gastro-intestinal origin. Some people are born with an easily excited and irritable skin—a skin readily susceptible to internal and external pathogenetic stimuli or excitants. In such cases this predisposition may show itself in infancy and early childhood by an erythema or an eczema, which is corrected by attention to the gastro-intestinal canal, a fact which points to a toxæmic cause generated in that region.

A sensitive nervous system is commonly present in those subject to skin affections, and undoubtedly the condition of the mind influences very much the condition of the skin, and not infrequently we learn when taking the history of a case of eczema that the attack has been preceded by mental strain and anxiety. This is not difficult to explain, for no organs suffer more functional disturbance than those of digestion as a result of worry. A catarrhal condition of the mucous membrane of the stomach is not infrequent in such people, and if it becomes chronic loss of nervous energy and diminished muscular activity of the stomach may lead to its dilatation. Fermentative changes then take place, and the formation and absorption of toxins may follow. Bouchard believed auto-intoxication to be more common from a dilated stomach than the bowel even in the condition of constipation, and he noticed eczema as occurring in 13 out of 100 cases of gastric dilatation.[1]

But the benefit derived from colon lavation in certain cases of cutaneous eruptions suggests the skin disturbance to be more frequently associated with toxic absorption from the bowel than from the stomach, though doubtless the two absorptions are frequently associated.

Gastro-intestinal toxins seem to have a special affinity for the vaso-motor centres, thus resembling the toxins of malaria. And circulatory disorders are common with disturbances of the alimentary canal; therefore, it is not improbable that many cutaneous eruptions are due to irritation or stimulation of the vaso-motor centres by these toxins. It must be remembered, however, that we all possess lines of defence against auto-intoxication, and it may be presumed that symptoms of toxæmia become manifest only when one or more of the defences (such as the cells of the intestinal mucosa and liver) become weakened and inefficient. This may happen when the intestinal epithelium is stripped by abrasions and ulceration (not uncommon in chronic constipation), or the liver or the kidneys become inadequate.

Eczema.—This term covers a multiformity of cutaneous lesions due to a catarrhal inflammation of the skin, and one-third of the cases of skin disease fall into this category. For four or five years I have been making observations which have led me to the conclusion that disorders of the alimentary canal, and especially of the colon, must be given a high place in the etiology of many cases of eczema. Chronic constipation is common in such cases; and is frequently associated with a catarrhal condition of the mucous membrane of the colon in which the presence of mucus in the ejecta is very apparent. Mucus when normally secreted is invisibly mixed with the fæces, but when seen in any quantity is abnormal, and frequently I have found after some experimental douches in cases of eczema, usually with, but at other times without, constipation, a considerable quantity of mucus, and treatment directed to this abnormality has resulted in the cure of the skin manifestation. I have therefore been led to connect the abnormal condition of the colon with the eczematous condition of skin, and to consider the latter as due to a toxæmia of intestinal origin. When there is no skin eruption following a definite type with this condition of colon, there is usually a muddy appearance of the skin noticeable, and sometimes, in addition to this, an eczematous or other eruption.

A gentleman, aged 66 years, a free liver, was sent to me last October, when I found nearly the whole of the body affected with eczema. There was great pruritus, preventing sleep. The history pointed to a bowel infection, for, like not a few of these cases, there had been a local anal eczema and pruritus for a year or two, and the pruritus was so bad that an operation had been decided upon to relieve it. It had, however, been found by bacteriologial examination that the colon was unhealthy, and a course of intestinal lavation was decided upon. After each intestinal douche of alkaline sulphur water, which brought away considerable quantities of mucus, the patient had an immersion bath of a similar water, and he drank a stronger sulphur water each morning. The improvement was very rapid both internally and externally, for as the colon became healthier and free from mucus the eczema and pruritus gradually disappeared. The patient returned home on the eighteenth day after treatment with no eruption, but he was advised to continue intestinal lavation at home for some time as a precautionary measure.

Other cases of eczema of a more local character have been treated equally successfully in the same way, and some of these have had a definite association with catarrhal inflammation of the bronchial tubes and asthma, and in other cases with gastric dilatation.

Psoriasis.—Whilst authors vary very much as regards the etiology of psoriasis, the late Dr. H. R. Crocker showed a connexion between it and digestive disorders, particularly after the age of 40 years. He says:[2] "Gout or its predisposing factors dyspepsia and constipation and alcoholism together made up half of thirty consecutive cases that I was consulted about." Stelwagon says of psoriasis: "Digestive and nutritive disturbances of all kinds are certainly provocative as to recurrences and of probable causative influences."[3] Pringle, Whitfield, and Brooke point to little or no connexion with gout, whilst the other authors quoted do; but arthropathies are mentioned by them as being seen with psoriasis, and rheumatoid arthritis is specially mentioned, which may be considered as frequently due to intestinal infection.

There is, as in the case of eczema, an inherited predisposition to the disease, but an external cause may provoke its development. In several cases when the symptoms and experimental douching have pointed directly to an intestinal causation the treatment already described has been brilliant in its results. In other cases with no particularly well-marked colitis good results have often, though not invariably, attended washing out the colon.

A lady, aged 57 years, unmarried, consulted me last year for psoriasis of 45 years' standing; there was inheritance in

[1] Trans. Bouchard Auto-intoxication in Disease, p. 162, 1894.

[2] Twentieth Century Practice of Medicine, p. 269.

[3] Diseases of Skin, p. 221.

this case, for her mother had also suffered from it. She was of a nervous temperament and was much troubled with chronic constipation. The colon was considerably distended and the stomach somewhat dilated, and she was conscious of having passed mucus with the stools for years. She had been accustomed to come to Harrogate for many years and had derived a certain amount of benefit from drinking sulphur water and having sulphur baths. I ordered the colon to be washed out with 30 ounces of alkaline sulphur water and, as is the custom, this was repeated after all fæcal matter had been removed, and followed by an immersion bath of the same water. With a steady improvement in the condition of the bowel there was seen a decrease in the cutaneous eruption, and with three weeks' treatment the general condition was very satisfactory and better than it had been for years. I advised intestinal lavation to be continued at home, and only a few days ago I heard from this lady that she was "worlds better."

A very successful case with colitis was that of an army officer who had a history of psoriasis for many years. It was one with an unusually marked tendency to the gyrate and circinate variety on the trunk, whilst in the extremities the ordinary scattered, rounded patches were seen. The patient was very much better for his first course of treatment and was quite free from eruption after the second.

I have not had a large experience of this treatment in cases of psoriasis, but in every case I have treated in this manner there has been a very considerable improvement. I am inclined to think, however, that the large doses of arsenic which so many of these cases receive are detrimental in aggravating any catarrhal condition of the mucous membrane of the stomach and bowel.

Urticaria.—I have already stated that a chronic condition of urticaria may be kept up in certain individuals as the result of changes in metabolism producing toxins which after absorption bring about vascular changes in the skin. I am now excluding the poisons of shell-fish and drugs which are introduced from without. I have found the cause in two cases of urticaria to depend upon a toxæmia due to an abnormal condition of the mucous membrane of the stomach and colon.

A married lady, aged 37 years, with a hypersensitive nervous system and unstable circulation, was sent to me last year, having had periodic attacks of urticaria for a year which could not be traced to any article of diet. The history showed constipation and slight gastric disturbances for several years, and on investigating the condition of the colon mucous colitis was found to exist. A course of intestinal douches with deep massage of the abdomen, in order to give better tone to the intestinal wall, soon cleared up the mucous discharge, and brought about a better condition of peristalsis which has become permanent. No recurrence of the urticaria has taken place since the treatment 12 months ago.

Another very similar case to this was that of a young married lady of much the same constitutional type, and in her case like treatment has been attended with equally successful results.

Acne.—A number of cases of acne vulgaris and of acne rosacea, the latter being in association with acne vulgaris, have been treated on these lines, and I agree with Whitfield in regarding seborrhœa as the primary cause of the acne disorder. Such patients are frequently of a nervous temperament, frequently suffer from gastric disorders and constipation, and instability of the peripheral circulation. Though some authorities (such as Bartholomy [4]) have frequently found dilatation of the stomach associated with acne, I have generally found that an unhealthy condition of the mucous membrane of the colon is a greater source of the toxins, predisposing the skin to parasitic invasion, than is gastric dilatation. Intestinal lavation has been prescribed with success, but as in practically all these cases there is found a lack of proper attention to the scalp, this as well as the face must receive special attention.

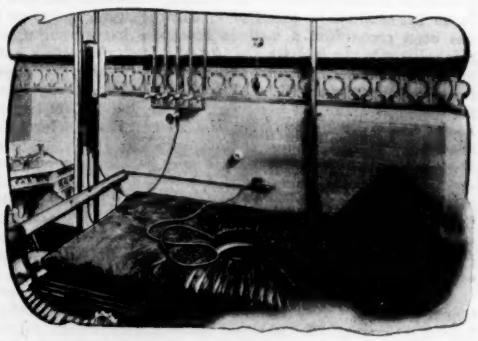
A lady living in India and much exposed to weather consulted me last summer for acne rosacea. Her age was 42 years, she was gouty, and her circulation was poor. She had marked constipation, but had but little digestive trouble. The eruption was more of the scaly papular kind than nodular, and without suppuration. There was an unhealthy condition of the scalp, and attention to this and the face, together with intestinal douching, caused a fairly rapid improvement, which I learn continues.

Similar treatment has been equally successful in two cases with suppurative nodules and acne vulgaris, and in other cases of acne simplex, and in some this was after vaccine treatment had failed to do good.

Pruritus.—The causes of pruritus are many, but undoubtedly the nervous and gouty temperaments are specially favourable to its development; and in the majority of cases auto-intoxication the result of gastro-intestinal and hepatic disturbances is the leading cause of this distressing ailment. There is no primary lesion of the skin, but by scratching, which is difficult to avoid, eruptions do arise, and it must be borne in mind that pruritus is frequently the precursor of a well-recognised attack of eczema, lichen, or urticaria. It may be general, affecting more or less the whole body, or local, involving the anus, the vulva, the palms of the hands, or the soles of the feet. Very frequently there are marked vaso-motor disturbances, and in the case of a lady with pruritus confined chiefly to the lower extremities, and associated with mucous colitis, a very variable peripheral circulation existed.

With pruritus ani there is not infrequently a certain amount of eczema around the anus, and the rectal mucosa is often involved in the itching. In all cases where eczema has existed I have found it to be the external and visible sign of a catarrhal condition of the mucous membrane of the colon, and internal douches of alkaline sulphur water, followed by immersion baths of the same water, have brought about such a marked change in the condition of the colon that the local skin lesions and irritation have soon cleared up.

The *method* adopted in carrying out this special treatment by lavation for mucous colitis, associated or not with skin eruptions, is as follows. An alkaline sulphur water is generally used both for the intestinal douche and for the immersion bath which follows it. The object of the internal douche is to wash away old fæcal matter and mucus from



Internal douche: intestinal treatment.

the colon and to give the mucous membrane an antiseptic dressing. This is done in the following way. A long rubber tube, after being sterilised by boiling, is passed into the sigmoid and is attached to a hydrostatic douche, when from 20 to 40 ounces of sulphur water at a temperature of 105° F. pass into the colon at a pressure of 2 feet, the patient lying first on the right side, then on the back, and lastly on the left side during the operation. This is repeated, and the ejecta after each douche are carefully examined and reported upon by a skilled attendant. Antiperistalsis of the colon normally exists, as pointed out by Hertz,[5] and is an important factor in this treatment, enabling rectal injections to reach the ascending colon and cæcum when diseased. A warm immersion bath of sulphur water follows the internal douche, and when in this bath a hot douche at a higher temperature plays upon the wall of the abdomen under water from a large nozzle with fine perforations, and is chiefly directed over the site of the colon.

The immersion bath not only opens out the peripheral circulation, and thus relieves any congestion of the viscera

[4] Étiologie et Thérapie de l'Acné. Archives Générales de Médecine, vol. ii., 1889, p. 641.

[5] Brit. Med. Jour., vol. i., 1908, p. 193.

which may exist, but is beneficial to the skin and nervous manifestations the result of auto-intoxication. I have shown before in these columns,[6] when dealing with catarrhal and dilated conditions of the stomach, that in most of these cases there is a serious loss of balance in the circulation under the domain of the splanchnic nervous system in the causation of which toxins play an active part, for there is too much blood in the splanchnic area and too little in the periphery, and the restoration of the circulation is therefore all-important.

In all cases it is endeavoured to make the treatment educational, and patients are advised to continue it at intervals after leaving Harrogate, but a second course of treatment is desirable in all chronic cases of colitis and skin disease if there is any tendency to recurrence.

Harrogate.

A NOTE ON

CÆSAREAN SECTION UNDERTAKEN IN THE PRESENCE OF SEPTIC INFECTION;

WITH A REPORT OF A CASE.

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ALL authorities agree that the maternal risks of Cæsarean section are increased directly by previous examinations unless conducted with the most scrupulous care; a few hold that previous obstetric manipulations or instrumentation definitely contra-indicate the operation where an alternative embryotomy is feasible. The morbidity and mortality of such infected cases are almost invariably brought about by soiling of the peritoneal cavity by an infected amniotic fluid, which in many cases, investigated post mortem, has been proved to be staphylococcic in nature. The sole risk, and it is no inconsiderable one, lies in this direction, and since it has been recognised a copious literature has sprung up on this subject in the last year or two, and fresh operations have been devised all with the object of preventing peritoneal inoculation by the selection of an extraperitoneal route and field of operation. It has been suggested that this should be attained by approaching the uterus from below the anterior parietal peritoneal reflection and by displacement of the bladder secure easy and safe access to the lower uterine segment. The criticism here is obvious—an incision is made into that part of the uterus least capable of retraction; the hæmorrhage that may ensue is difficult to check and has sometimes necessitated hysterectomy when the operator has gone "too low" even in the performance of the classical operation.

An alternative suggestion recommends opening the peritoneal cavity and in various ways "tenting" off the operation field by suturing the anterior parietal peritoneum to the uterus above the level of the proposed incision. Against this I would advance the arguments that such suturing, to be accurate and above all watertight, will be almost impossible to carry out; while the time employed may be considerable—a most undesirable event in a Cæsarean section where a fœtal factor has to be considered.

The strongest point that can be raised against the extraperitoneal technique and which equally applies to such alternatives as symphysiotomy and pubiotomy is, that in the presence of such an emergency as obstructed labour which not only the obstetric surgeon but the less practised accoucheur may have to face, it is imperative to reduce technique to the simplest form consistent with safety to the patient.

Have we then, if we reject the extraperitoneal technique, no alternative but to perform embryotomy in these doubtful cases? Surely, if the danger lies with the infected amniotic fluid, we can at least make an endeavour to get rid of it or reduce its toxicity, or failing that to prevent its access to the abdominal cavity.

Now, as regards attempts to wash out liquor amnii (or "after-waters," as they are in these cases) with the fœtus still *in utero*, the difficulties are much greater than at first appears to be the case. Very little indeed is known of the dynamics and hydrostatics of the second-stage uterus. Matthews Duncan, Lahs, and Olshausen are the chief authorities we have to rely on for information on these points.

Is there always a collection of "after-waters" capable of being irrigated after the patient has been in labour many hours, or does the uterine wall closely come in contact with the superficies of the child, reducing the upper uterine "cavity" to a merely potential space? One's own observations made on Cæsarean sections conducted on second-stage patients certainly do not support the view of Lahs, that "after-waters" are present to any appreciable extent. Most of these uterine incisions result in a perfectly "dry" extraction of the fœtus with no noticeable gush of amniotic fluid.

Now, if it be that there is no amniotic collection to wash out, the only means of irrigating the infected cavity, with the fœtus *in situ*, will be by passing up a douche nozzle to the fundus and irrigating the cavity freely with some aseptic neutral fluid. In the case I am about to describe this was effected by using a soft pewter douche-tube (a glass tube would be dangerous). The douch-tube was introduced by my assistant (Dr. H. Stevens, resident medical officer at the hospital), the tip being clearly felt at the fundus through the parietes. A copious flow of sterile salt solution was allowed to run, at a temperature of 105° F., for a couple of minutes, and the flushing effect on the uterus was obvious. The laparotomy was performed as soon as the nozzle was withdrawn, and the uterus was "eventrated" and incised at once. It was remarked that the extraction of the child was perfectly "dry," although barely a minute before the fundus must have contained several ounces of salt solution. The report of the case briefly is as follows.

The patient, aged 30 years, I-gravida, was admitted to Queen Charlotte's Hospital on June 18th, 1910, at 6 P.M. She was markedly rachitic, with characteristic deformity of the lower extremities. The true conjugate was estimated at just under 3 inches. The patient's condition could not be considered "favourable" as labour had been in progress for 40 hours and the membranes were ruptured. The head was "floating" above the brim and the uterus was temporarily almost inactive. There was a history of attempted forceps extraction; on examination there was no trauma of the cervix or lower genital tract. The pulse was 110, and the temperature was normal. The fœtal heart-rate was normal and regular, between 120 and 130. There was, however, considerable maternal distress. In the presence of an apparently unharmed fœtus embryotomy was decided against; the abdomen was painted with tincture of iodine, while preparations for immediate Cæsarean section were carried out.

Prior to the section one hour later the abdomen was again painted with iodine and the uterine cavity washed out with sterile salt solution. The temperature was 105° F. It was felt that at this temperature, which would be reduced inside the uterus to approximately 100°, no risks of provoking premature fœtal respiration would be caused. The head was displaced and the soft pewter douche nozzle was passed with ease to the fundus; several quarts of saline solution were washed through the uterus and escaped freely. An 8-inch incision was made in the parietes in the middle line, 4 inches above and 4 below the navel. The uterus was "eventrated" through the incision and the edges of the wound were carefully packed round with sterilised towels. A median sagittal fundal incision was made, the placenta being encountered at the lower end. The incision was practically bloodless and the fœtus was easily extracted, with no apparent escape of fluid accompanying it. The uterine wound and abdominal incision were closed in the usual way, using stout and finer silkworm-gut sutures throughout. The patient was not sterilised.

The fœtal head showed well-marked moulding and a forceps "grip" over the right frontal eminence. Some anxiety was felt for the child during the first 48 hours owing to pyrexia (maximum temperature 105°) very suggestive of the septic broncho-pneumonia to which so many of these children succumb (even in the absence of trauma) after long labour and exposure to infected liquor amnii. The child, however, made a rapid recovery and has thriven well on the breast, supplemented by the bottle owing to defective nipple

[6] The Influence of the Nervous System and External Temperature upon Certain Circulatory Changes Concerned in the Etiology of Catarrh, Ulcer, and Simple Dilatation of the Stomach, THE LANCET, vol. i., 1906, p. 1031.

formation. The mother had a mild sapræmic temperature for the first two days, but subsequently she made an uninterrupted recovery.

I have thought the case important as illustrating that between embryotomy on the one hand and Cæsarean section followed by hysterectomy on the other there may be an intermediate group of cases such as this one, where special prophylaxis adopted against an infected liquor amnii might have a distinct place in treatment.

Wimpole-street, W.

THE PREVENTION AND CORRECTION OF DEFORMITY FOLLOWING ARTHRITIS OF THE HIP-JOINT.

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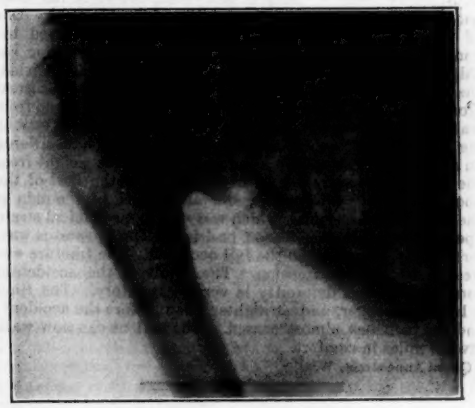
IN the treatment of tuberculous and septic arthritis of the hip-joint too little care is usually taken to get the femur into a good position during the active stages of the disease, so that when the disease is cured or quiescent the limb is often in a very bad position. Frequently there are flexion and adduction of the thigh on the pelvis to very considerable degrees, so that the limb is several inches shorter than the other one. This is a very great disadvantage to the patient, and gives rise to the characteristic limping gait of late hip disease. This is all the more deplorable because it is preventable by the application of a proper apparatus during the active and contracting stages of the disease. The thigh can be secured in a position of slight abduction and extension, so that no shortening need result, even in tuberculous cases with some want of development of the neck of the femur. Incidentally it may be remarked that there need never be any suppuration or pathological dislocation of the hip-joint in tuberculous disease if it is treated early enough with complete rest and suitable instruments. I need hardly say that excision of the hip in children for tuberculosis is a very bad operation, leading to excessive shortening before adult life, and very often to persistence of the disease with sinuses and secondary sepsis. For early cases conservative treatment is immeasurably better. The causes of shortening in maltreated cases of tuberculous hip disease may be classified into two kinds. 1. *False shortening* caused by flexion and adduction of the thighs on the pelvis. 2. *Real shortening* due to the following causes: (*a*) Cessation of growth of the whole limb from want of use. This is only marked when there is much shortening or chronic suppuration preventing the use of the limb for some years. The readiest indication of it is obtained by measuring the two tibiæ with the knees flexed, so that the upper ends can be easily identified. (*b*) The want of development of the neck of the femur. (*c*) Absorption and changes in the shape of the head and neck of the femur due to tuberculous disease. These are, to a great extent, avoidable by early treatment and the entire prevention of standing upon the diseased limb. (*d*) The pathological dislocation of the head of the femur on to the dorsum ilii. This is entirely preventable by early and continuous treatment by rest in a proper apparatus.

Shortening, however, should be very slight in all cases of tuberculous disease of the hip-joint if treated properly from the first. The same is true for septic arthritis. Unfortunately the ideal treatment is not carried out, for one reason or another, in a great many cases; so that deformity and shortening are common, and are evident to everyone who looks about him in the streets. The worst of these cases are those which were unfortunately submitted to excision of the joint in childhood, when that operation was popular from 10 to 20 years ago. I have seen a great many patients with from 2 to 11 inches of shortening by the time they have grown up. By this shortening I mean the difference of the level of the heels, and the amount of compensation that is required by means of the high boot, or some other instrument. This, of course, includes all the shortenings mentioned above, both the true and the false.

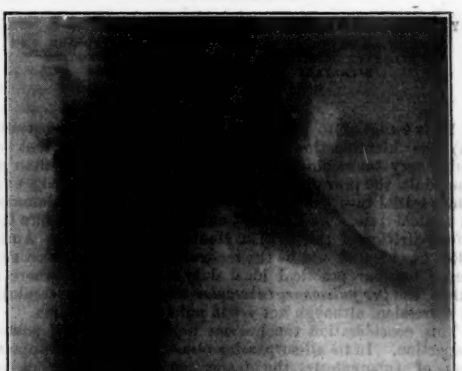
A good deal can be done to improve the condition of those patients who are the unfortunate victims of deformity and shortening, in the absence of active disease of the hip, by subtrochanteric osteotomy and division of some of the tight adductors. This allows the correction of the flexion and adduction. Occasionally the fascia in front of the hip may require subcutaneous division. If the femur be divided obliquely, it can be appreciably lengthened by sufficient and well-directed extension. The ordinary extension stirrup is applied 24 hours before the operation. Through a small incision below the right trochanter the femur is divided. The section runs obliquely downwards and outwards from just below the neck of the femur, and thus well away from the old disease. The adductors are divided subcutaneously to the extent that is necessary for the over-correction of the deformity. The extension is then applied in the following way. When the right hip is the diseased one, the pulley for

FIG. 1.



Before operation. Old neglected tuberculous disease of the right hip with considerable flexion and adduction, and 2½ inches of shortening. Note acute angle between the thigh-bone and pubic ramus, and the absorption of the neck.

FIG. 2.



After the operation of subtrochanteric osteotomy. Note the correction of the adduction. The shortening is now only half an inch. Note the wide angle between the thigh-bone and the pubic ramus. The photographs do not show the correction of the flexion, which was severe.

the weight extension is fixed at the right lower corner of the bed, while the pelvis is kept near the right border by means of broad straps. A well-padded perineal band extends from the left side of the perineum to the left upper corner of the bed. In this manner the adduction is over-corrected. To diminish the pressure of the perineal band and to make use of the body-weight, the foot of the bed is elevated. To correct the flexion the pulley at the foot of the bed is placed as low as possible and the right lower quarter of the bed has no mattress, so that gravity tends to straighten the limb.

This treatment is continued for about three weeks, when a plaster spica is substituted. About 12 weeks after the operation the patient is allowed to put some weight on the foot; but care must be taken to delay this as long as possible on account of the risk of bending at the union. Figs. 1 and 2 show the X ray appearances before and after treatment in this way. A girl, aged 11 years, had 2½ inches of shortness of the right leg. She now only has a quarter of an inch and needs no high boot. In worse cases the method has been equally successful in reducing the shortening. For instance, in a girl aged 15 years a shortening of 3½ inches was reduced to three-quarters of an inch. This made a great deal of difference to her comfort and appearance. This is so far satisfactory even in cases of ankylosis, but it is far more successful when there is some mobility of the hip-joint. One of my patients with considerable deformity improved her condition very much by falling down stairs and breaking her thigh-bone in the upper third. She fell in a sitting position, the right heel coming against the right femur below the great trochanter. This patient was a middle-aged woman, who from want of exercise was excessively stout. She had been sent to me by Dr. C. T. Brookhouse of Bromley, and I had ordered an apparatus, designed to conduct most of the weight from the tuber ischii and the root of the thigh to the heel of the boot. This had afforded considerable relief to the pain at the hip- and knee-joints, which was due to mechanical strain upon these joints in a flexed position. The apparatus was, fortunately, not on when the fall occurred. The fracture was treated by weight extension. The result of the accidental correction of the deformity is very satisfactory. The limb is longer, stronger, and straighter than before the accident, and the pain has almost ceased. The patient can now walk several miles in comfort.

Queen Anne-street, W.

ON PRE-TUBERCULOSIS AND PRE-PULMONARY TUBERCULOSIS, AND THEIR DIAGNOSIS IN RELATION TO SCHOOL INSPECTION.

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IT is essential to realise the practical distinction between (*a*) the identification of tuberculosis and (*b*) that of pulmonary tuberculosis. *In children*, much more than in the adult, the prevailing method begins at the wrong end. Their initial tuberculosis is almost invariably pre-pulmonary in clinical date. As I pointed out in a paper read before the Ilford division of the British Medical Association in April, 1909, our ideal should be the recognition of the *pre-tubercular stage;* but our practical ideal duty is to identify, where it exists, the *pre-pulmonary tubercular stage*, that of tuberculosis in possession, although not yet in pulmonary possession.

This consideration touches our urgent problems of school inspection. In its all-surpassing object, that of the suppression of tuberculosis, the inspection is a matter not of perfunctory examination but of special skill, for two reasons—(1) the difficulties and the fallacies of pulmonary diagnosis; and (2) the fact that the methods of pulmonary diagnosis are not only imperfect or even misleading, but too often are on the wrong scent.

1. These difficulties and fallacies have been pointed out by others whom I may quote, but in this limited space I cannot undertake their systematic discussion. Among many valuable communications special reference must be made to those from Dr. R. W. Philip[1] and from Dr. J. E. Squire and from Dr. John Allan.[2] Both Dr. Allan[3] and Dr. Philip lay stress on the point that the results obtained by medical inspectors are not at present comparable, because there is no uniform standard on which a diagnosis can be based. Dr. Philip proposes, as standard tests, the following "stigmata" of puerile tuberculosis: "(*a*) palpation for evidence of glandular enlargement of the anterior cervical and supraclavicular areas (only cases showing at least a dozen such enlarged glands to be included as positive); (*b*) percussion of the apices; and (*c*) auscultation of the apices." Dr. Allan also writes:—

> It is much less easy to diagnose pulmonary tuberculosis in the child than in the adult owing to the greater difficulty of interpreting the physical signs met with. There is no single sign or symptom pathognomonic of this disease in the child, and I am not convinced that the association of dulness on percussion, bronchial breathing, and crepitations which may or may not be intermittent, in an emaciated anæmic child is absolutely diagnostic of pulmonary tuberculosis. To cite only one example, I have seen the above picture in children who suffered from enlarged tonsils and adenoids, but in whom after operation the physical signs disappeared within a few days and the symptoms rapidly improved. Under such circumstances I hardly think a diagnosis of tuberculosis is justified.

Dr. Squire agrees "entirely with Dr. Philip that the standard of clinical training in the physical examination of the chest needs raising; but we must, on the other hand, avoid such refinement that every chest is pronounced diseased which presents any sign differing from what belongs to the ideal healthy chest—often termed 'normal' in error; for few children, and practically no adults, satisfy this ideal of healthy lungs entirely and always."

2. The exclusion or the non-exclusion from school is a medical administrative question, and therefore a question of medical opinion. But an exhaustive and so far as possible *correct diagnosis and report* of the actual condition are a question as to facts. They are a great responsibility upon the inspector, to whom exclusively the examination of the child is entrusted. They must therefore bring into his purview the possibility of a pre-pulmonary tuberculosis, and particularly of the most common form of it, which is the glandular form. That duty weighs heavily upon the minds of Dr. Philip and of Dr. Allan when they dwell upon the necessity of a searching examination for enlarged glands. Dr. Allan had also previously[4] "endeavoured to show how important it is to recognise early tuberculous mediastinal glands, and referred to some of the aids that might be employed to substantiate or reject the provisional diagnosis. Some of these additional diagnostic weapons, which include the X rays, &c., cannot readily be used by the medical inspector, in particular, for instance, the tuberculin tests. These can best be applied by the family doctor or, if necessary, by a specialist." He adds:—

> Children who are physiologically delicate, "pre-tuberculous"—call them what you will—are prone to, and may under adverse circumstances, develop pulmonary tuberculosis. They are physically defective and are not able to compete on equal terms with their more fortunate companions who are in good health. They do not, as a rule, require to be kept from school, but they should be under medical supervision, and this supervision can best be carried out at the hands of the family doctor or, in necessary cases, by the medical staff of the local hospital.

These views are an important recognition of the inevitable thoroughness which should belong to the inspection when properly understood. To bring this into clearer light it is not inopportune to call attention to the subject of the *tracheo-bronchial glands* and of the practical importance of their examination.

Both the theoretical and the practical aspects of enlargements of these glands were opened up long since by Guéneau de Mussy's views on the broncho-adenopathic causation of whooping-cough, and at a later date in their relation to pulmonary tuberculosis by Ch. Fernet,[5] who pointed out the association of three signs in early phthisis: (1) a dulness at the apex; (2) a dulness at the seat of the tracheo-bronchial glands either on the right or on the left side of the spine; and (3) an engorgement of the base of the corresponding lung. The second of these seems to be the most important, and has been the least utilised.

In a paper on *dorsal percussion*[6] I demonstrated that normally the fifth dorsal spine is relatively dull on percussion, with a slight extension of dulness to the right of the tip of the spinous process. Fernet's second sign in reality consists in an intensification of that normal dulness, which I believe may be correctly attributed to the presence of the infra-tracheal glands below the resonance of the bifurcating trachea. This points to the necessity for a careful routine examination of all anæmic children for any abnormal degree

[1] THE LANCET, vol. i., 1910, p. 751.
[2] THE LANCET, vol. i., 1910, pp. 886-7.
[3] Cf. Brit. Med. Jour., Dec. 11th, 1909.
[4] Cf. THE LANCET, vol. ii., 1909, p. 1209.
[5] Bulletin de l'Académie de Médecine, Oct. 11th, 1898
[6] Brit. Med. Jour., vol. ii., 1899, p. 1168.

of the "fifth spine dulness," and for its abnormal extension either to the *right or to the left of that spine.*

I need not dwell upon the *surgical aspects* of vertebral percussion which are mentioned in a paper communicated to the present annual meeting of the British Medical Association. They include, among others, tubercular glandular abscess and spinal abscess, and early spinal tuberculosis. But, as an excuse for my renewed advocacy of this valuable but neglected method of diagnosis, I may be permitted to call to witness some striking illustrative evidence recently published, although its publication was not made in connexion with any reference to the question as to school inspection.

Dr. H. C. C. Mann's two cases of "tuberculous mediastinitis" reported in *Guy's Hospital Gazette* for February[†] are not perhaps so remarkable for rarity, since the lesions described are not in themselves uncommon, apart from their unusual mediastinal extension and from the paroxysmal severity of the clinical symptoms—as they are instructive in their varied practical lessons. The most important of these are: 1. That the medical diagnosis and the surgical diagnosis of common and probable affections are capable of being long delayed even when the patients are under observation. 2. That the method which alone seems to be able to trace the early changes is not generally valued, as it did not call for any mention among those resorted to, although it may have been used in these cases. I say "alone" because in the first case the X rays, whilst showing the large mediastinal mass, did not avail to advance the diagnosis; and because the second case was so severe that every method must have been tried to arrive at a conclusion. In similar cases a successful spinal percussion is capable of furnishing useful suggestions for an early diagnosis. 3. Their severity and their fatal tendency are enough to impress upon us the duty of not neglecting the spinal examination either in similar beginnings or in presence of any general threatenings of puerile tuberculosis.

We are told that in the first patient, a boy aged 8 years, examined on July 8th, 1907, after symptoms of bronchitis for two years, and attacks of nocturnal dyspnœa with wasting for six weeks, "fibrosis of the right lung with some local bronchiectasis was suspected." On the 25th, the severity of the paroxysmal dyspnœa having greatly increased, with symptoms of mediastinal pressure and of respiratory and venous obstruction, and with para-manubrial dulness, "mediastinal growth, probably originating in the thymus, was diagnosed."

Examination with the X rays showed *diminished trans-radiancy of the upper chest.* In the next fortnight the symptoms increased: the face was very œdematous, the superficial veins were tortuous and enlarged, the attacks of dyspnœa were very urgent, and the pain was severe. The breathing stopped twice, and the house surgeon was about to perform tracheotomy, but the child recovered. The temperature rose in the evening to 101° F. On August 24th the gait was noticed to be peculiar; the knee-jerks were brisk, and there was ankle clonus on the right side. The attacks of dyspnœa became less urgent. On August 30th the child first complained of pain in the back, and tenderness was found over the last cervical and first two dorsal vertebræ. At the end of September there was kyphosis involving the last cervical and upper three dorsal vertebræ. The child was kept on his back for four months and then fitted with a poroplastic jacket and jurymast. Stridor was heard on both sides of the chest as late as May, 1908. The jacket was worn until July, 1909. All signs of active disease disappeared.

The length of this quotation, which Dr. Mann may kindly condone, was necessary to justify (1) the inference that a tubercular bronchial adenopathy due to bronchitis probably pre-existed, and may have accounted, as in many similar cases, for the spasmodic, as distinct from the permanent obstructive, dyspnœa; (2) the view that the mediastinitis may have been of the usual glandular abscess type, with a subsequent gradual and latent evacuation through the trachea, and that late vertebral infection, *viâ* the lymphatics (F. Wood Jones), may have supervened; (3) or the alternative view that the spinal disease, as *fons et origo*, and the spinal percussion changes had existed long before noted; and (4) the conclusion that, in either case, the fifth spine and its vicinity must have been very dull, for glandular, for spinal, and for mediastinal reasons.

In Dr. Mann's second interesting case, that of a boy, aged 3 years, pain in the back and paraplegia developed in November, 1909, after an attack of scarlet fever beginning on Sept. 23rd. When admitted on Nov. 22nd his paroxysmal dyspnœa was due to a latent abscess causing manubrial and para-manubrial dulness, with cyanosis and with œdema of the face and neck. On Nov. 29th "the respiration stopped. Tracheotomy was performed and a catheter was passed down into the bronchus without effect. The necropsy showed miliary tubercles in the spleen and liver, and a few tuberculous ulcers in the small bowel. The trachea was flattened and pushed forwards by a large mediastinal abscess. The second, third, and fourth dorsal vertebræ were carious." As the lungs and glands are not reported as diseased, this reads like a case of vertebral tuberculosis, perhaps primary, or perhaps secondary, viâ the thoracic duct, and due to a primary intestinal tuberculosis. In either case percussion of the spine should presumably have yielded vertebral dulness long before the onset of paraplegia, and established the surgical diagnosis of spinal disease in the absence of any kyphosis. It is noteworthy that both these cases appear to have been instances of pre-pulmonary tuberculosis, as the lungs are not stated to have presented permanent lesions.

The value of these extreme illustrations is that they are unequivocal. Cases such as these are not unknown to us. Though they end in the hospital their beginnings are at the school, and that is our time. School and school inspection are the providential opportunity given to us for remedying in the race the failure of robustness and for arresting the beginnings of disease. As regards tuberculosis, it may be said of our material that by definition it is almost invariably in the incipient, and therefore deceptive, stages—truly a material for fine diagnosis. Having recognised that fact, let us be consistent in using all the best methods of diagnosis, guided by pathology and by practical clinical sense; in short, let us investigate for the right thing in the right way.

As the incidence of glandular tuberculosis prevails over that of the pulmonary form in the proportion of the relative youth of the children we should expect and suspect the presence of tubercular adenopathy much more frequently than that of phthisis in the average school-fit weaklings. Advanced pulmonary disease is in itself likely to stop mechanically the attendance of the hopelessly unfit.

Malignant infective tubercular adenopathy, as opposed to non-malignant or scrofulous tubercular adenopathy, is invariably either mesenteric or bronchial, or else a combination of both. These are clearly the leading lines for our investigation. Therefore, within the thoracic range of our examination, our chief care should be to ascertain if possible the condition of the *infra-tracheal glands*—and they are happily within the reach of practical diagnosis by percussion. In view of the importance of the matter, any relative difficulty that may be inherent to the method can hardly be advanced as a sufficient reason for its omission.

General vertebral percussion and "mesenteric" vertebral percussion must also claim attention in their special connexion with spinal disease and with mesenteric disease respectively. They are not, however, within the scope of these brief remarks. The school inspection question has many and varied aspects, with which this is not the place to deal. The purpose of this communication is exclusively restricted to the aspect of early clinical diagnosis, in the service of which some of the suggestions which have been offered may be found of practical use.

Upper Brook-street, W.

[†] Cf. THE LANCET, vol. i., 1910, p. 874.

MEDICAL SICKNESS AND ACCIDENT SOCIETY.—The usual monthly meeting of the Executive Committee of the Medical Sickness, Annuity, and Life Assurance Society was held at 429, Strand, London, W.C., on Friday, July 15th, Dr. F. de Havilland Hall being in the chair. During the last month the claims have shown signs of steady increase and are now nearly up to the normal expectation. The new proposals show a tendency to fall off and are fewer in number than for the corresponding period last year. It does not seem to be generally known that dental surgeons are eligible for membership of the society. In order to clear up any doubts about this it may be as well to point out that all duly registered dental surgeons are eligible to join. The rates charged by the society are considerably less than those charged by any other insurance company for similar benefits, and it is hoped that members of the medical and dental professions will soon recognise the expediency of joining a society which can offer such liberal terms and excellent security, and which is and has been run entirely and solely for their benefit, for just over 26 years. Prospectus and all information can be obtained from the secretary, Mr. F. Addiscott, 33, Chancery-lane, London, W.C.

A METHOD OF STAINING DEEP COLONIES IN PLATE CULTURES *IN SITU* IN AGAR MEDIA.

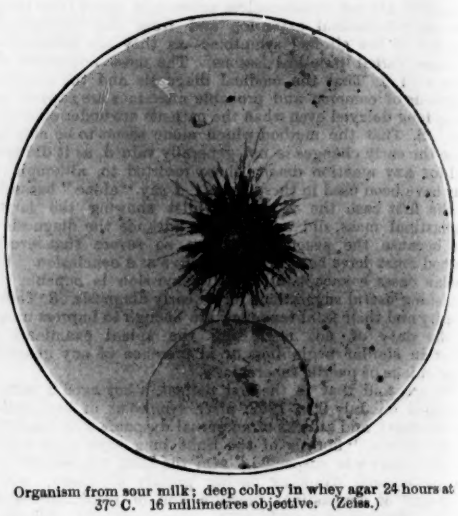
BY EDWARD DODSON,
FELLOW OF THE ROYAL GEOGRAPHICAL SOCIETY.

IN the course of investigation of yeasts and moulds the necessity for finding some means of accurate observation under high power and preserving the characteristic colonies developed deep in agar plate cultures became evident to me.

FIG. 1.

A deep colony of B. anthracis in nutrient agar grown 24 hours at 37° C. 1-12th oil immersion lens. No. 4 eye-piece. (Swift.)

FIG. 2.

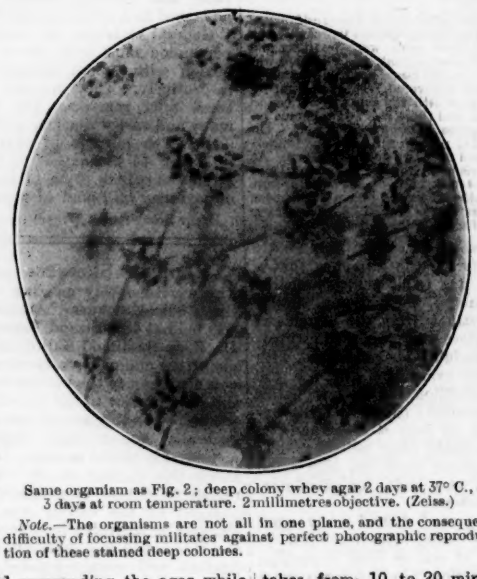


Organism from sour milk; deep colony in whey agar 24 hours at 37° C. 16 millimetres objective. (Zeiss.)

The usual impression preparations can necessarily only give one an imperfect representation of the surface growth. I have failed to find anywhere a description of a method for staining the deep colonies. I therefore tried to work out such a one. In the hope that the method discovered will be of assistance to other workers I am not delaying publication until a large series of preparations has been made and the value of the process fully worked out. The initial difficulty arose from the fact that most stains are taken up with equal avidity by the agar and the organisms and are given up with nearly equal facility by both during decolourisation and dehydration.

By a method comparable to Romanowski's stain I was able to overcome this difficulty. I believe that the acid eosin used combines with the basic methylene blue and forms a deposit on the organisms. For some reason this deposit is not formed in the agar medium itself but only on the organisms and in the fluid surrounding the agar while staining. The resulting eosinate of methylene blue is only slightly soluble in methylated spirit, and consequently when decolourising the colonies are left stained, while the unaltered methylene blue is rapidly extracted from the agar.

FIG. 3.



Same organism as Fig. 2; deep colony whey agar 2 days at 37° C., 3 days at room temperature. 2 millimetres objective. (Zeiss.)

Note.—The organisms are not all in one plane, and the consequent difficulty of focussing militates against perfect photographic reproduction of these stained deep colonies.

The plates are made in Petri dishes in the usual manner. Ordinary agar can be used; the method is equally successful with modifications of agar, such as glucose, glycerine, and whey agar. It is better not to pour them too thick, about 1/16th inch is best, as although during the drying the slab of agar becomes much thinner, the colonies being on different planes, those on the lowest will be inaccessible under the 1/12th immersion lens if the medium is too thick. Unless the plate culture is to be kept alive for a series of colonies at different ages it is better to fix by pouring methylated spirit into the Petri dish and allowing half an hour to elapse before cutting out.

With or without preliminary treatment with spirit, take a sterile scalpel and cut a square of the desired size round the colony and lift out the slab of agar by inserting a wet chisel under it. By careful manipulation induce the agar to slide up the chisel, and holding the chisel at an angle of about 45° to the wet surface of a glass slide push the slab out to the slide, taking care to include no air bubbles. After this allow to dry in 37° C. incubator or other hot place, and soak in methylated alcohol for 20 minutes. Next put in 5 per cent. solution of acetic acid for about 10 minutes to dissolve off surface crystals. It is necessary to watch this part of the process carefully to avoid dissolving the medium. Wash and dry in incubator until the agar is quite dry, which usually takes about 20 minutes.

Staining method.—Pour on "Stephens's scarlet writing fluid"—which acts better than ordinary water soluble eosin—and allow to remain on until the deep colonies are well stained. This usually takes from 10 to 20 minutes, according to the thickness of the agar. It is advisable until one has become accustomed to the naked-eye appearance of the stained colonies to inspect under low power to see if the ink has penetrated to the deepest layers. Pour off and blot the

edges and press lightly with soft paper to express any ink that may have run under the edges of the slab. Now pour on Löffler's methylene blue, diluted with an equal volume of distilled water, and tilt the slide well until the ink is discharged from the agar, and it turns violet. Before this end is attained it may be necessary to pour off the first portion of blue and to put on a second. Then wash in a small stream of water directed from a wash bottle to carry away any deposit of altered methylene blue that may be formed on the surface of the agar. Decolourise in spirit until the colour ceases to come out in a visible cloud; finish dehydration in aniline oil, pass into xylol, and mount in Canada balsam.

It will be found that the organisms are stained a deep purple and the agar medium a very pale green. With a 1/12th oil immersion lens the individual organisms can be perfectly seen, while the colonies of those bacteria and yeasts that send off streamers and chains through the medium are very beautiful. Each individual organism is as plainly visible as in an ordinary stained film preparation, but it is a distinct advantage to be able to see the organisms in their exact relative positions; those organisms that are dichotomous, for instance, form interesting subjects of study when stained in this manner. In some of the fermentative organisms isolated from milk there is shown to be at first a proliferation of oval yeast-like cells, but when—either through exhaustion of the food-supply or the poisoning of the medium with the products of metabolism—the environment becomes unsuitable, then long rod-shaped cells are formed which radiate from the colony (Figs. 2 and 3). A number varying from 8 to 20 of the yeast-like cells bud off from the end of the rod and then another of the long cells is pushed through the medium. Although this organism in liquid cultures gives both forms of cell, yet it was not until a preparation of a deep colony in agar plate was stained that I was able to understand the use in the life economy of the fungus of the two types of cell produced. I give this illustration as a possible use in research work of the staining method described.

I have to acknowledge my indebtedness to Dr. David N. Nabarro for suggestions, help, and cultures, and to Dr. A. C. Stevenson for photographs Nos. 2 and 3.

A CASE OF THROMBOSIS OF THE INFERIOR MESENTERIC VEIN.

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THE patient, a man aged 48 years, was admitted to the Sussex County Hospital on the morning of April 1st, at about 1 o'clock, complaining of great pain in the lower part of the abdomen and in the scrotum.

History.—The patient had been quite well until about 9 o'clock in the evening, when he began to feel pain in the lower part of the abdomen, chiefly on the left side. At the same time, or soon after, he noticed that the left half of his scrotum had begun to swell; but as he had had for several years a left inguinal hernia producing no inconvenience, and always reducible without difficulty, he did not trouble himself about it. The pain did not come on after any sudden effort, but was of gradual onset. As it became rapidly worse he was brought to the hospital. He was a labourer, and had never worked in lead; his bowels had always been regular, and had been opened that morning; he had never had any illness of any kind all his life.

Condition on admission.—At 1 o'clock, about four hours after the onset of the attack, the patient was writhing with pain which was of a most intense griping character, referred to the lower part of the abdomen, more on the left than on the right side, and also in the scrotum. The inguinal canal and scrotum were filled with a huge hernial swelling, the scrotum itself being swollen to the size of a cocoa-nut, and extremely tense; the penis was obliterated by the swelling. This swelling gave some slight impulse on coughing and was in places resonant. The abdomen appeared somewhat distended, but not markedly so, and there was a definite fluid thrill to be made out; no rigidity of the abdominal walls was present, nor was there any area of tenderness or of hyperæsthesia. With the exception of the hernia there was no localised tumour, and no definite signs of obstruction were present; there was no vomiting, fæcal or otherwise. The pulse was 96, but of good tension; the temperature was 96·6° F., and the skin was cold, clammy, and sweating freely. There were no signs of disease of any sort in the heart or lungs.

The patient was prepared for operation immediately, but was unable to pass urine. Immediately before going to the theatre he passed a pint and a half of bright blood per rectum, whilst on the table he vomited a considerable quantity of food in an undigested state.

Operation.—Anæsthesia was induced with chloroform, and as soon as the patient was unconscious the greater part of the scrotal swelling disappeared, but as blood in great quantity had been passed per rectum it was decided that the hernial tumour should be explored. A catheter was passed but only a few ounces of normal urine were drawn off. A vertical incision was made over the swelling; the hernial sac was freed from the surrounding structures and then opened. Blood-stained fluid escaped in some quantity, and a knuckle of gut was found presenting at the neck of the sac, slightly purple and congested, but not to all appearances past recovery. This was drawn down to expose the gut beyond it in each direction, but this, instead of becoming less congested, was the reverse, and presented patches of dark purple and even black discolouration where the damage done was very extensive. Nearly three feet were drawn down, but as the same conditions were found to prevail beyond this limit, and since a very extensive resection of gangrenous gut was obviously necessary it was decided to open the abdomen in order to complete the operation.

The abdomen was then opened through the sheath of the left rectus muscle, the incision being about five inches in length and reaching from the level of the umbilicus nearly to the pubes. On opening the peritoneal cavity a large quantity of blood-stained fluid escaped, the whole cavity being filled with it. The portion of gangrenous gut presenting through the hernia opening was drawn back into the abdomen and out through the new incision. The extent of the affected gut was found to comprise about five feet extending upwards from a point some six inches above the ileo-cæcal junction, whilst definite congestion and even ecchymoses of some size were present in the mesentery attached to the affected gut, so that a resection of the whole extent of affected gut and mesentery was necessitated. This was begun a few inches above the upper limit, between two pairs of intestinal clamps, a purse-string suture being first inserted immediately above the upper clamp and tightened; the gut was then cut across below the upper clamp, the peritoneal cavity being protected by a gauze packing. A second purse-string was then inserted through the intestinal wall, half an inch above the first, the clamp removed, and the blind end intussuscepted into the gut above it. A third suture was then inserted in the same way to prevent any chance of leakage. The mesentery was then resected between a clamp below and successive stout silk ligatures above, in the same way as a broad ligament, until the base of the mesenteric attachment was reached. The same procedure was then taken with the lower end, and in this way two blind ends of small intestine were left lying in the abdomen requiring an anastomosis.

The ascending colon was found to have a very short meso-colon and could not be drawn out of the wound, so that the transverse colon was brought outside and the small intestine above the blind end was placed in contact with it. The two portions of gut were then clamped and a lateral anastomosis formed between them, the opening made being about two and a half inches in length. The anastomosis was completed in the ordinary way, an extra row of sero-serous stitches being inserted for safety, and tension stitches put in at each end.

The abdomen was mopped free of fluid as far as possible, and the abdominal incision was closed by through-and-through silkworm gut sutures. The hernial opening was closed except for a space left for a drainage tube, which was passed into the abdominal cavity through the remains of the hernial sac, after the latter had been for the most part closed. A pint and a half of saline was given intravenously during the operation, and strychnine hypodermically, while after return to bed a pint of saline was introduced under each breast, and digitalin was given hypodermically four-hourly.

The resected gut was reported as non-viable in its whole extent, while the mesentery for about three inches from the edge of the gut was purple and deeply congested, with several definite ecchymoses scattered throughout its substance, some of the patches being nearly two inches in diameter. Thus in the absence of all signs of a volvulus the lesion must have been a thrombosis or embolism of one of the larger mesenteric vessels, although on examination after the operation no definite thrombosis could be found.

Subsequent progress.—The patient slept a little after the operation, and was fairly comfortable during the day. He was given hourly feeds of milk and water and of albumin water, which he kept down without difficulty. In the evening he was given a turpentine enema, after which he passed flatus. To relieve pain in the evening morphia (¼ grain) was ordered. On April 2nd the patient had had a fair night and his strength was well maintained. An enema of soap and water was given in the morning with a fair result. Calomel (¼ grain) was given four-hourly through the day. At night the pulse was not so strong, and saline was given under the breast—one pint with half an ounce of brandy and three drachms of adrenalin solution (1–1000) on each side; the effect of this was good. On the 3rd the patient had two fluid fæcal motions and the feeds were increased in consequence. Benger's food and plasmon with jellies and beaten egg were given. The pulse again became weaker at night and saline with brandy and adrenalin was given as before (a pint into each flank). On the 4th the pulse was much improved after a fairly comfortable night's rest. The abdominal wound was red and somewhat swollen, so one of the stitches was removed, allowing some turbid serum to escape; some of this was collected and found to contain bacillus coli. A culture was made and a vaccine produced, 5,000,000 dead bacilli being injected into the arm. The patient had two loose actions in the morning and two in the afternoon, so a mixture of bismuth and opium was given by the mouth to check the tendency to diarrhœa. On the 5th the diarrhœa continued to be troublesome, though the motions were quite free from blood and mucus. An enema of starch and opium was given, and a mixture of catechu, chalk, bismuth, and opium was exhibited with but little benefit. The pulse became more rapid, rising to 120, and the patient was exhausted by the frequent actions. There were no abdominal distension and no rise of temperature to suggest a peritonitis. The diarrhœa persisted through the night and the patient obtained but little rest. On the 6th the diarrhœa continued and lead and opium was given in addition to the mixture but with little effect, the condition becoming more grave in consequence. About 6 o'clock the patient became very restless and the pulse-rate increased with onset of dyspnœa. A little later a very definite air-hunger supervened with pain in the chest; he became rapidly weaker and died at 9 o'clock.

Post-mortem examination.—On opening the abdomen it was found that the anastomosis had held well and that there was no leakage around it. Both blind ends were quite healed without leakage, and the stump of the mesentery was in a satisfactory state. The vessels of the mesentery were carefully examined but no definite thrombus was found in any vein or artery. There were, however, old dense adhesions all over the peritoneum with well-marked fibrous perihepatitis and perisplenitis, evidently of considerable standing. There was no recent peritonitis. In the thorax the heart was quite normal, and the aorta showed no signs of atheroma. The lungs on section showed numerous small embolisms, apparently quite recent; and as the area of congestion around each was still quite small and a bright red in colour these probably occurred almost immediately before death, and would account for the pain in the chest and air hunger felt by the patient during his last few hours.

Although no thrombosis was actually found in the vessels of the mesentery there can be little doubt but that the original lesion was one of thrombosis of the inferior mesenteric vein, especially in view of the normal condition of the heart and aorta found post mortem.

Remarks.—The chief points of interest in this case appear to rest in the question of diagnosis, especially in view of the rarity of the causative lesion. The predominant symptom was pain referred to the lower part of the abdomen, of a gradual onset, but culminating within the comparatively short space of two hours in an agony of the most intense acuteness, associated with a tumour in the left inguinal and scrotal region, which had grown since the onset of the pain to the size of a small cocoanut.

The history of the case was of interest especially on account of its extraordinary negativeness. The entire absence of any previous illness or even malaise, of indigestion, of vomiting, of melæna, and of pain was of great help in limiting the diagnosis, as rendering unlikely such acute lesions as perforation of an ulcer of the alimentary tract, whether gastric, duodenal, or typhoid in character. In face of the alleged freedom from urinary troubles, from jaundice, and from venereal affections, such conditions as renal and biliary colic and the gastric crises of tabes appeared equally improbable; whilst the muscular development of the patient rendered a Deitl's crisis of nephroptosis very unlikely. Thus one was left, before making any examination of the patient, with the following as the most probable lesions: acute fulminating appendicitis, strangulated hernia (external or internal), intussusception, acute pancreatitis, volvulus, and mesenteric thrombosis or embolism.

Of these lesions intussusception in adults is almost invariably the secondary result of an intestinal neoplasm, malignant or benign, and such growths in almost every case give rise to symptoms on their own account before producing those of an intussusception; and here the absence of melæna, of diarrhœa, of constipation, of straining, and of the passage of mucus was apparently definite.

On examination of the patient two points were at once striking—the presence of a very large and tense left inguinal hernia, and the presence of free fluid in the peritoneal cavity. At first sight the hernia, if strangulated, presented an obvious explanation of the pain and swelling, but did not account for the free fluid, unless the latter had previously been present but unnoticed, and this seemed unlikely. The situation of the pain in the lower part of the abdomen was not like an acute pancreatitis, where the pain is most often referred about or a little above the umbilicus, though such a lesion might give rise to the free fluid. The absence of tenderness and rigidity over the right iliac fossa practically negatived an appendicular affection, especially in the absence of any fever. The negative history of rheumatic and venereal disease, and absence of all physical signs of cardiac or arterial lesion, rendered the likelihood of mesenteric thrombosis or embolism very small. Volvulus could not, however, be eliminated in this way, and remained a probability with strangulated hernia, internal or external.

The next question was whether the fluid in the peritoneal cavity was due to the presence of the hernia, whether it was itself the cause of the hernia, or whether the two phenomena bore no relation to one another at all. On closer examination of the hernia it was found to be resonant in places, which was against strangulation, and further than this there was the definite statement by the patient that the pain started *before* the appearance of the hernial swelling. These two very important facts, then, made it seem more than probable that the hernia might be merely a secondary effect of some grave intra-abdominal lesion, which was capable of producing in a short space of time a very large outpouring of fluid into the peritoneal cavity. Such might be the result of a very large internal strangulation by bands, &c., of a volvulus, or of a mesenteric vascular lesion, though the latter was unlikely in view of the previous health of the patient and of his excellent cardiac and vascular condition. Thus until the operation was performed it was practically impossible to arrive at any exact diagnosis of the condition, though the passage of the large quantity of fresh blood immediately before reaching the theatre rendered certain the presence of some acute intestinal lesion.

With regard to the operation, the tangible presence of the hernia led to the first incision being made over the swelling with a view to its exploration. Had the blood not been passed per rectum just previously the self-reduction of the greater portion of the hernia under the anæsthetic might have led to the condition being left without further interference, but under the circumstances operation became inevitable. The lateral form of anastomosis was preferred to the end-to-end form because of the impossibility of gauging the exact extent of the damaged gut, and because with the lateral junction no special strain was inflicted upon the doubtful portion. In the after-treatment the great difficulty to contend against was the diarrhœa that so often occurs in cases of intestinal resection, and it was this that so greatly reduced the vitality of the patient. Indirectly the enormous

drain upon the body fluids very probably aided a tendency towards further thrombosis, which gave rise to the final and fatal pulmonary embolisms.

The recorded mortality after operation for arterial thrombosis is 92—95 per cent.; whilst in venous thrombosis it falls to 81—88 per cent. Without operation, of course, no recoveries are reported. The fact that this patient lived for six days is probably due to the absence of the heart lesion which is usually present in such cases.

Reviews and Notices of Books.

Protozoology. By GARY N. CALKINS, Ph.D., Professor of Protozoology in Columbia University, New York. Illustrated. London: Baillière, Tindall, and Cox. 1910. Pp. 349. Price 15*s.* net, or $3.25.

A CERTAIN fascination surrounds the amœba, as we watch its movements upon the stage of the microscope, in the idea that this collection of protoplasm has been living since life first appeared in our world and possesses the potentiality of immortality. Professor Calkins refers to this, but he says that the same sensations might be experienced upon gazing at our fellow beings or at any other living thing. He thinks that the difference is not so great after all, because protozoa, like metazoa, may die from old age. Certainly they *may*, but none of the ancestors of the particular amœba we see can have done so, and while the living metazoan body is destined to disintegration in a comparatively short time the amœba has in its whole body the potentiality of immortality.

Had Professor Calkins called his book "Parasitic Protozoa," or used some name for it that indicated that parasitic protozoa, perhaps particularly the tropical forms, were dealt with in detail, while the free-living forms were treated of only in such a manner as to serve but barely as an adequate introduction to their more dependent relatives, our part would have been easy, for we should have little to do but praise. This misnomer, for no other term can be applied to the title of the book, is the more surprising and disappointing because of the hope very naturally raised by Professor Calkins's earlier work on Protozoa published in the Columbia University Series. There he dealt with this difficult subject in a new and very satisfactory manner, and we had hoped that the present volume would prove to be an adequate amplification of the valuable introduction he had already provided.

Unfortunately there are many circumstances which militate against the proper treatment of the protozoa by any single author. A man could hardly hope to obtain a really thorough knowledge of the Phylum in one short lifetime, even were the existing knowledge in a readily available and satisfactory condition, which it is not. The classification, even in some cases where broad and important points are involved, is in a hopeless state of confusion. Many of the most active workers are medical men whose technical zoological training only began when they commenced to make original observations upon parasitic protozoa in connexion with the diseases they cause. We fear that in too many cases a sound foundation in a knowledge of the free-living protozoa is regarded as quite unnecessary and a waste of time by such men. Yet a moment's thought makes evident the supreme importance to medicine of a familiarity with the life-cycles and general facts relating to the free-living protozoa; for the parasitic forms must necessarily have been derived originally from the non-parasitic.

At the present time a grave confusion in morphological terms exists, particularly with regard to the parasitic protozoa, a confusion which may be attributed to the invasion of zoological fields by observers who have not received a special zoological training; but against this must be set the fact that our great clinical lessons have all been taught us by just this energetic and self-sacrificing class of workers. The morphological terms that were already available before the medical investigation of the parasitic protozoa were comparatively simple and reasonable. We had the nucleus and cytoplasm of the cell. The latter, from which the motile and other organs of the unicellular organism are developed, was further divided into endo- and ecto-plasm; and sometimes we find, particularly in vegetable cells, a definite cell membrane. Minute bodies, generally on the limit of microscopic vision, the centrosomes, are almost invariably found in the cytoplasm. We know of these structures in two very different relations: (1) as occupying the centres of force or great activity in the mitotic figure; and (2) in connexion with the motile organs of individual cells. This connexion with motile organs is most marked in the case of the flagella (e.g., spermatozoa), but they have several times been described as multiplying beyond the usual pair in the case of ciliated cells, one centrosome being found at the base of each cilium. Professor Calkins leaves his readers in great doubt as to what he thinks about the centrosomes in protozoa, and, indeed, about the whole process of mitosis in them.

Maupas's classical work upon the fertilisation of unicellular animals gave us the lead in the investigation of the life-cycles of the protozoa. Zoologists were already familiar with the micro- and macro-nuclei present in so many of these forms. He first showed that the function of the macronucleus was almost certainly entirely concerned with the nutrition of the cell, while the micro nucleus only took part in conjugation and subsequently gave rise to macro-nuclei in the new generation of individuals. We therefore have macro- and micro-nuclei already named, and also the centrosomes.

With regard to identifying the two nuclei of Trypanosomes, Trypanoplasma, and other parasitic protozoa with the macro- and micro-nuclei of *Paramecium*, for instance, objections certainly exist, but they are rather of a negative than a positive nature. We believe that we are right in saying that in no case has an account of fertilisation in these parasitic forms received general acceptance. While our knowledge is in this state it would appear more reasonable and less likely to produce confusion if the old terms were adhered to. Let us take a concrete case. In Trypanoplasma there are two nuclei—one large one, generally spherical in shape; the other smaller, elongated and curved. The latter stains far more densely than the former, so much so that with the methods usually employed it is difficult to make out any structure in it at all. Outside the small nucleus are two minute bodies situate at the base of the two flagella, or, rather, one at the base of the flagellum, the other at the base of the filament which runs along the edge of the undulating membrane. There seems every reason to believe that these small bodies are centrosomes; at any rate, there is nothing whatever against such a supposition. Yet they have recently been called "blepharoplasts," and, unfortunately, this term is very often, perhaps generally, applied to the small darkly staining nucleus, which is also known by the complicated name of "kinetonucleus." This one examle shows in what a puzzling condition the morphological nomenclature of these forms is. There is, therefore, a splendid chance for anyone with sufficient authority to rectify these matters by going back to the old and well-known terms where they can be used, and by refusing countenance to all new ones, except in the cases where undoubtedly new structures with new functions are found. Blepharoplasts, kinetonuclei, and the rest may some of them be such structures, but the proofs are yet to seek. Professor Calkins, it seems to us, has missed this chance of simplifying

nomenclature in an authoritative way, for he has left morphological terminology in the same state as he found it.

On p. 89 Professor Calkins says: "Since the hereditary characteristics are now known to be connected in some way with the chromosomes, the mitotic figure becomes the mechanism of heredity." A general consensus of opinion is here assumed which certainly does not exist. Meves, Godlewsky, and many other observers of high repute have insisted as recently as this year that the cytoplasmic structures play just as important a part in the transmission of hereditary characters, and their evidence is weighty and apposite. He deals with the parasitic protozoa thoroughly, if somewhat briefly, and the volume for its size contains a very complete and up-to-date account of the work that has been done upon these forms. The bibliography is excellent, but the nomenclature in describing the work of various authors is not made uniform and the matter is sometimes rather disconnected. On p. 204 "epitheliomata" is written where "endotheliomata" is evidently intended.

Eléments d'Obstétrique (*Elements of Obstetrics*). By Dr. V. WALLICH, Professeur Agrégé at the Faculty of Medicine, Paris. Second edition. With 135 figures. Paris: G. Steinheil. 1910. Pp. 720. Price 8 francs.

IN bringing out a second edition of his book Professor Wallich has amended it in several particulars. It is a text-book which contains a great deal of information carefully and clearly written and well arranged. Many of the illustrations are extremely good, and it is interesting to note that they are drawn from a wide range of authorities, including some of the best-known plates from the works of Smellie and Hunter. As might have been expected, the author lays great stress upon the practice of abdominal palpation and quotes with approval many of the dicta of Pinard and of Pajot. In the chapter on the hygiene of pregnancy a special section is devoted to the important question of puericulture, upon which Pinard in particular has written so much, "a science (as he terms it) which has for its aim the accumulation of knowledge regarding the reproduction, the preservation, and the improvement of the human species." English readers will receive with interest the full account, with four illustrations, given of the instrument devised by Ribemont-Dessaignes for clearing the air-passages of the newly-born and for carrying out intratracheal insufflation.

In describing the precautions to be taken to avoid the risk of septic infection the author calls attention to the fact that Professor Lucas-Championnière was in reality the first to introduce the use of antiseptics into midwifery practice, which he did in the maternity of the Hôpital Cochin in the year 1874. In the preliminary washing of the hands Professor Wallich does not recommend the use of a stream of running water, but maintains that the use of a basin is preferable, since a strong soapy solution forms the best cleansing agent. The whole chapter on the practice of antisepsis is eminently practical, and the difficulties surrounding the conduct of a midwifery case with complete antiseptic precautions are fully recognised. In cases where it is necessary to draw off the breast milk the author recommends the suction pump of Rohan, an apparatus which permits of the milk being drawn off and the child being able to suck simultaneously. By this Professor Wallich has obtained very excellent results, and has been able to obtain as much as 800–900 grammes of milk in the 24 hours from the mother. The apparatus is certainly an ingenious one and merits trial in this country.

The first portion of the second part, dealing with the various abnormal medical and surgical affections of pregnancy, is especially good, and forms one of the best sections in the book. The whole, however, is, as we have said, well written and forms a text-book of great merit, containing within a comparatively small compass a large amount of information. The binding and paper, too, are better than is usual in many French scientific works, as is also the index.

A Manual of Sanitary Law. Specially arranged for candidates for Public Health Qualifications by ROBERT P. MCDONNELL, D.P.H., F.R.C.S. Irel., Fellow of the Society of Medical Officers of Health; late Medical Officer of Health Bray No. 2 Dispensary District, Rathdown Union. Dublin: Edward Ponsonby. 1910. Pp. 89. Price 2*s.* 6*d.*—*Handbook of Scotch Sanitary Law.* By THOMAS W. SWANSON, Associate Royal Sanitary Institute; Member Sanitary Association; Cert. Victoria University. London: The Sanitary Publishing Co., Limited. Third edition. 1910. Pp. 63. Price 2*s.* 6*d.*

THE object of the two small volumes under review is to supply in an abbreviated form the law relating to sanitary matters for the benefit of students preparing for their examinations in Ireland and in Scotland respectively. Both cover practically the same ground, and it is interesting to note that the two authors approach their subjects from slightly different points of view, and supply conveniently condensed information in dissimilar forms.

Mr. Robert P. McDonnell's Manual of Sanitary Law professes to rescue the student of Irish sanitation from the necessity for wading through irrelevant matter in the larger volumes relating to the law of public health by extracting from them those portions of the law upon which he may reasonably expect to be questioned when being examined for the Diploma of Public Health or before appointment as a sanitary inspector. We prefer rather to picture the candidate in question as gathering the law for himself at first hand and in its fuller form and as using Mr. McDonnell's work as an analysis, mentally and physically portable, to remind him of what he has read and to save him from the labour of condensing and analysing for himself. Learning from an analysis alone is a rather severe exercise for the memory, and the portions which necessarily escape its grasp in such circumstances may prove to be of material importance. Used as a reminder the synoptical handbook is invaluable, and the one under review is compiled upon sound methods for use as such. It would be better adapted for serving as a guide to the sources of fuller information if references were given in all instances to Acts and Sections. Several examples of D.P.H. examination papers are appended, and there is a comprehensive index.

Speaking generally, we may apply the above observations equally to the Handbook of Scotch Sanitary Law which Mr. Thomas W. Swanson has compiled with special regard for the requirements of candidates for sanitary inspectorships north of the Tweed. He prefers, however, a different literary method from that of Mr. McDonnell, and presents the essential features of the law abridged into a succession of paragraphs, epitomising it in a readable form, and inserting references to sections for the use of those who desire to consult the full text of the statutes bearing upon particular subjects. In fact, his work might be described as fitted to form an introduction to a more comprehensive study of the law for one who had time to indulge in it, whereas the method of Mr. McDonnell would render his book more serviceable to the learner who had already gone to original sources for himself. Either book, however, is capable of being used by itself without going further by those desirous of acquiring their knowledge in an abbreviated form with the least possible amount of trouble, but in each case the student must remember that the high road is generally safe and the short cut generally perilous. A useful feature in Mr. Swanson's work consists in the provision of blank pages for notes to be made by the student facing each page of text, but there is no index, an omission which is to

be regretted unless it be intended that the reader should assist his memory to retain the information provided for him by making one for himself. Perhaps each author might profit a little by comparing his own work with that of the other.

Annals of Tropical Medicine and Parasitology. Vol. IV., No. 1. (Amazon Yellow Fever Expedition.) Illustrated by 11 plates, 6 of them coloured. Issued by the Liverpool School of Tropical Medicine. Liverpool: At the University Press; London: Archibald Constable and Co. 1910. Pp. 150. Price 10*s.* 6*d.* net.

THIS number contains an interim report of the Amazon Yellow Fever Expedition which was despatched by the Liverpool School of Tropical Medicine to Manaos early in 1905. This expedition, which was the fifteenth to be sent out by the Liverpool School and the second to be despatched to the Amazon region, comprised two members, Dr. H. Wolferstan Thomas and Dr. Anton Breinl. Shortly after their arrival in North Brazil both of these intrepid investigators contracted yellow fever from which they fortunately recovered. Subsequently, however, complications supervened in the case of Dr. Breinl and he had to return to Europe, leaving Dr. Thomas to carry on the work of the expedition single-handed from 1905 to February, 1909. The present report now published embraces only a portion of the researches carried out at the laboratory established at Manaos. It is hoped to complete later the account of all the investigations, and to publish at short intervals a series of papers on subjects affecting the welfare and hygienic conditions of the Amazon region.

The main object of the expedition was to investigate yellow fever and to advance our knowledge of the disease. Chimpanzees were successfully inoculated; rabbits and guinea-pigs also exhibited certain reactions when inoculated with infective blood from human cases of yellow fever or when subjected to the bites of infected stegomyiæ. The chimpanzees available in the laboratory were insufficient in number to allow experimental proof to be made of certain points that might have been followed up. With regard to the technique employed in the experiments, it is thought inadvisable to publish it until an exhaustive report can be presented. Investigations had to be suspended in 1909 for want of animals susceptible to the disease. A new expedition, however, has now been organised and arrangements made for an adequate supply of chimpanzees. By this means, and in view of the experience already accumulated, it is confidently expected that an early and satisfactory report will be published.

The present report, which is now printed in the fourth volume of the *Annals of Tropical Medicine and Parasitology*, does not confine itself to yellow fever alone. It comprises eight chapters, four of which are written by Dr. Thomas, the subjects of which are: (1) the sanitary conditions and diseases prevailing in Manaos (illustrated by a map of the town and a chart showing the fluctuations of the waters of the Rio Negro on which it is built); (2) pathological report of a case of œsophagostomiasis in man—this is handsomely illustrated with coloured and other plates; (3) "mossy" foot of the Amazon region, an infective verrucotic condition affecting the upper and lower limbs (illustrated with photographic reproductions of cases treated); and (4) on yellow fever. A fifth chapter is contributed jointly by Dr. Thomas and Dr. R. Newstead on the mosquitoes of the Amazon region, illustrated with a coloured plate. The remaining chapters comprise one entitled, "Étude Zoologique de l'Œsophagostome de Thomas," by M. A. Railliet and M. A. Henry; another, which is illustrated, is on Guarana, by Mr. Prosper H. Marsden, F.C.S., lecturer on materia medica in the University of Liverpool; and the other is on Some of the Chemical Constituents of Guarana, by Mr. Nierenstein, Ph.D., lecturer on biochemistry in the University of Bristol.

The chapter on yellow fever was delivered by Dr. Thomas in the form of a lecture to the students of the Liverpool School of Tropical Medicine. It gives much valuable information generally as to the disease, and many useful hints as to its treatment and prevention. The various clinical types of yellow fever are described, from those of a mild nature, liable to be mistaken for influenza or "gastric disturbance," to the more malignant and rapidly fatal forms of the disease. The treatment is summed up as consisting of good nursing and the administration of alkaline waters, such as Vichy. Prevention of yellow fever can only be secured by enforcement of "tropical sanitation," which Dr. Thomas defines as comprising a general cleaning up of the town, a campaign against mosquitoes, and the training of the inhabitants to recognise that certain practices are dangerous to themselves as well as to others. Dr. Thomas is to be congratulated on the large amount of serviceable work which he has done at Manaos under conditions of considerable difficulty, for his labours may form the basis of some important discoveries and advancements in the near future.

LIBRARY TABLE.

An Introduction to the Study of Hypnotism. By H. E WINGFIELD, M.D. Cantab. London: Baillière, Tindall, and Cox. 1910. Crown 8vo, pp. 175. Price 5*s.* net.—Dr. Wingfield's book is a most satisfactory treatise. It elevates his rather difficult subject into one that calls for scientific consideration, while it is written with the quiet impressive manner of a student who is at pains to state facts and to repress his obvious enthusiasm for the branch of study in pursuit of which his conclusions have been arrived at. Thus there is no sensational trimming to accounts in themselves sufficiently striking, and there is at the end of the book a chapter dealing with the case against hypnotism, in which the limits of hypnotism and its disadvantages are clearly pointed out. The last are, in Dr. Wingfield's opinion, two—viz., an increased tendency to hypnosis and an exaggerated susceptibility to suggestion in the waking state. The author defines hypnosis as "a psychical condition in which suggestions are not only more easily accepted, but are also realised with an intensity much greater than is possible to the normal state." A large portion of the work deals with experiments carried out at Cambridge, in many instances with the help of Professor J. N. Langley. The other portions of the book which will most concern the medical reader deal with treatment by suggestion and contain much recent information. Dr. Wingfield indicates plainly the kind of case likely, in his opinion, to be successfully handled by hypnotism. Dipsomaniacs, he says, provide some of the most gratifying instances of success, while morphinomaniacs appear to be less satisfactory under treatment. Insomnia and stammering are other states in which success is sometimes achieved to a degree possible, he believes, with no other form of treatment at present available. That there is a distinct field for hypnotic treatment scientifically carried out by qualified medical men few practitioners any longer doubt. That in the present condition of life in crowded towns this field is ever increasing we are inclined to believe; at any rate, Dr. Wingfield's belief is a fair collection of inferences—viz., that "there is a certain obscure province of pathology that no therapeutic power but that of hypnotism can penetrate. Only its relieving and strengthening suggestions can ..... unravel the twisted knots of insubstantial yet intolerable pain ..... and harmonise

those discords between bodily and spiritual life that beset a highly artificial and complicated civilisation." It is well that medical men should realise that they may have in hypnotism an agent which is speedily likely to succeed in that very class of case which is often unsuccessfully treated by more obvious methods, and which is apt to swell the numbers of the vaunted triumphs of "Christian Science" and allied measures.

Psychotherapeutics. A Symposium by MORTON PRINCE, M.D., and others. London and Leipzig: T. Fisher Unwin. Pp. 204. 1910. Price 4*s.* 6*d.* net.—This book is composed of a series of papers by American neurologists, and has as its introduction some remarks addressed by Dr. F. H. Gerrish to the American Therapeutic Society on the occasion of his reading a paper on the Therapeutic Value of Hypnotic Suggestion. This same paper forms one of the chapters of the volume and gives a clear account of modes of inducing hypnosis and illustrations of the kinds of case in which the treatment is to be recommended. Another chapter by Dr. Boris Sidis deals with the psychotherapeutic value of the hypnoidal state. By the "hypnoidal" or "sub-waking" state Dr. Sidis describes a condition in which mental life can be affected with ease—a state of increased "suggestibility" without the deeper effect upon consciousness that is characteristic of the true hypnotic condition. The hypnoidal state is a transitional intermediate condition. Dr. Sidis states that the therapeutic value of the hypnoidal state consists in the liberation of reserve energy requisite for the synthesis of the dissociated systems, and he devotes a considerable space to the discussion of the theory of reserve energy. Into this discussion it is easy to follow Dr. Sidis, but not so easy to emerge with a clear notion of the tenets of the theory, plain though these appear at first sight. It is not, however, the language of Dr. Sidis that is difficult to follow, but confusion easily arises from the extreme complexity of the psychological problems with which he deals. Considering this complexity, inherent as it is in the nature of the subject, we must regard this book as being a valuable addition to the material available for those medical men who wish without much previous training to get an insight into the laws and the problems and the practical applications of psychology. These latter cover a wide field, and we find in this little book a chapter dealing with the relation of character formation to psychotherapy, a matter widely distant from the application of hypnotism to neuralgia. We gather that, as is the case with continental nations, a lively national character renders the American more frequently subject to conditions that can be helped by psychotherapy than is the case with our own less emotional countrymen. Nevertheless, a knowledge of the matters dealt with in this book is of great value to medical men in Great Britain also, and there is little doubt that, owing to modern conditions of living, new forms of disease tend more and more to involve, or to be prejudiced by, the mental state

Hypnotism and Suggestion. By BERNARD HOLLANDER, M.D. Freiburg. London: Sir Isaac Pitman and Sons. 1910. Pp. 295. Price 6*s.*—This book contains a good account, for popular purposes, of the effects of suggestion and of different methods of procuring the hypnotic state. There is also a large amount of interesting matter concerning the history of treatment by hypnotism and suggestion, with plentiful reference to, and quotations from, Braid and those of his time. The French schools of hypnotism, Nancy and Paris, are also discussed, and both here and in the general trend of his remarks Dr. Hollander gives a very fair representation of what the position should be to-day in the mind of a medical man with regard to the whole subject of hypnotism and its application to the cure of disease. With some of the author's remarks *à propos* of allied subjects, such as apparitions, we find ourselves less in agreement, nor are we prepared to endorse his judgment as to the frequency with which persons in ordinary circumstances are liable to enter into a condition of hypnotism, or at least of heightened suggestibility. Dr. Hollander is of opinion that the exercise of hypnotism should be confined by legislation to qualified medical men: here we are at one with him. Yet, as he points out, danger to life is probably very remote even in ignorant hands, although he is able to quote one authenticated instance. Numerous examples are given to show the kind of case for which hypnotism is valuable and the good results that may be achieved. The book may be regarded as a safe, if not very deep, guide to knowledge on the subjects of which it treats.

Spirit and Matter before the Bar of Modern Science. By ISAAC W. HEYSINGER, M.D. London: T. Werner Laurie. 1910. Pp. 433. Price 15*s.*—The title of this book is deceptive. There is much talk of "spirit" and a certain amount of "matter," but there is no evidence whatever of modern science. The nearest approach to anything like science consists in quotations from scientific authorities of a not very recent date. A more confused and confusing kind of book than Dr. Heysinger's it would be hard to imagine. So far as we have been able to extricate a clear idea from his work we take his leading notion to be that all religions are founded on spiritual phenomena and that therefore spiritualism is true. Dr. Heysinger frequently mentions psychology, but we fear that his work is only likely to discourage and worry those who may wish to obtain an insight into the difficult problems attacked by the scientific psychologist.

First-aid to the Sick: or Diseases, their Description and Treatment. A Work of Reference for the Home. Written in plain language by D. HASTINGS YOUNG, M.B., M.S. Edin., &c. London: George Routledge and Sons. Pp. 280. Price 3*s.* 6*d.* net.—The scope and nature of this book are best indicated by its sub-title. The author in his preface explains that his object has been to afford the general public a plain and simple guide, which will enable them to render first assistance to the sick. Now, the essential use of first-aid, as we understand it, is for emergencies, and in this book Dr. Young has given brief accounts of the symptoms of the ordinary common diseases and of their treatment, including the use of drugs, few of them coming within the category of medical casualties or emergencies. In our opinion such a book is likely to be productive of harm rather than good, the more so that the directions given in regard to treatment are in some cases questionable. For the treatment of acute appendicitis, for example, a large enema of soapy water and olive oil is recommended, this to be repeated every four hours, and 10 to 15 drops of chlorodyne is suggested as "the only drug which had better be used," a smaller dose being given every three to four hours according to the severity of the pain. This is dangerous advice, and it comes as something of an anti-climax to be told that the early attendance of a medical man is absolutely necessary, as these cases are always serious. We are sorry for the practitioner who might be called in after the symptoms and signs had been masked by chlorodyne. There is no need for such a book as this, and the best form of first-aid in cases of sickness is the timely calling-in of the practitioner. Treatment must follow in the wake of diagnosis, and domestic diagnosis, even aided by books such as this, is even less satisfactory than domestic treatment.

JOURNALS AND MAGAZINES.

Bulletin of Entomological Research. Issued by the Entomological Research Committee (Tropical Africa) appointed by the Colonial Office. Edited by the Scientific Secretary. Vol. I., Part 1. April, 1910. London:

Longmans, Green, and Co., and Taylor and Francis. Pp. 88. Price 4s.—Some time ago we announced that this bulletin would shortly appear, and this, the first number, has for preface an interesting account by Dr. A. E. Shipley, F.R.S., of how the Tropical African Research Committee came into being. The insects with which the committee propose to deal are those which are both hurtful and profitable to man, using the expression in its widest sense, that is they will treat not only of insects which transmit disease and which injure plants, but also of those insects which destroy or prevent the development of other and harmful species. The first paper is one on the larval and pupal stages of West African culicidæ, by Mr. W. Wesché, F.R.M.S., founded on a large collection of these insects gathered by Dr. W. M. Graham. The paper deals with the anatomical and structural differences by which the various species can be recognised and is illustrated by carefully drawn plates. An appendix by Dr. Graham gives an account of the methods to be pursued by those who wish to study mosquito larvæ. Dr. Graham points out that there are two methods for the checking of mosquito larvæ—the one direct destruction, the other the destruction of their food-supply, which is, as a rule, living fresh-water algæ. He adds that "very little attention has been paid to the second method, though it is apparently worthy of further study. Unfortunately, any such investigation demands an exact knowledge of West African fresh-water algæ, a subject upon which very little information is at present available." In connexion with this subject we may mention the influence of copper upon the growth of algæ. In THE LANCET of Oct. 28th, 1905, p. 1269, we reported some experiments in which it was shown that the addition not only of minute quantities of copper salts but the presence of the clean metal also rendered the water free from algæ as well as odourless, colourless, and fit for consumption, and it was further reported that micro-organisms were destroyed. Apparently the addition of one grain of copper sulphate to one gallon of water was, under certain conditions, sufficient to destroy the vitality of the typhoid bacillus. This subject has received serious practical attention by the United States Department of Agriculture, and an interesting report was issued in 1906 by Mr. Karl F. Kellerman and Mr. T. D. Beckwith on behalf of that department. We have ourselves found that sulphate of copper in a very small proportion (roughly, an avoirdupois ounce in about 120 gallons of water—i.e., under a grain to the pint) will prohibit the growth of algæ in an ordinary garden rain-water tank, and possibly this method may be worth a trial. Other papers are those by Mr. R. E. Drake-Brockman upon blood-sucking diptera in Eastern and South-eastern Abyssinia; two papers by Mr. E. E. Austen upon two new species of African fruit-flies and a new species of Cordylobia, the latter being a dipterous insect whose larvæ are subcutaneous parasites in man and other mammals; two papers by Mr. G. C. Dudgeon upon hemiptera injurious to cocoa and upon parasites of silk-worms; and one by Mr. R. Newstead upon coccidiæ from Uganda. There is also a list of collections received from various parts of Africa. Altogether, the *Bulletin* is of great interest, and the work of the committee will doubtless result in the collection of facts of real value, both economical and hygienic.

Edinburgh Medical Journal.—In the July issue of this journal is published an account of an interesting discussion at the Edinburgh Medico-Chirurgical Society on Artificially Prepared Hypnotics, introduced by Dr. Francis D. Boyd in a paper notable for its strong condemnation of the use of sulphonal and of the tablet form of administration of drugs of this class. Dr. John D. Comrie gives a historical sketch of early knowledge regarding phthisis, from Hippocrates onwards. Dr. T. Addis writes on the coagulation time of the blood in disease, noting that in bacterial infection no marked effect is produced in this phenomenon unless the germs are present in the blood itself; when this occurs the typhoid bacillus and pneumococcus hasten coagulation, while streptococci and staphylococci delay it. An interesting case of disease of the pituitary body, with symptoms referable to the thyroid gland and ovary, is recorded by Dr. J. Eason, with an ophthalmological report by Mr. J. V. Paterson.

The Medical Chronicle.—Two papers on diseases of the spinal column appear in the July number of this magazine. In the first, written by Dr. W. B. Warrington, a large number of different affections, traumatic and other, are enumerated and discussed. In the second Mr. C. Thurstan Holland deals with the value of radiography in the diagnosis of fracture of the spine and of some other common conditions. Both papers are well worthy of careful perusal, this group of affections presenting very puzzling features and giving rise to considerable difficulty in diagnosis.

Birmingham Medical Review.—Two papers on social problems affecting the medical profession are published in the June issue of this review. Mr. Gilbert Barling writes on Poor-law reform, with special reference to the treatment of the sick poor, and praises the scheme outlined in the Majority Report of the recent Commission. Mr. H. Bagster Wilson deals with the relations of the profession to the nation in general, pointing out, on the one hand, the extent to which medical opinion is ignored in the conduct of affairs, and, on the other, the debt which the public owes to its medical practitioners; he also sketches a scheme for a due coördination of all agencies dealing with health matters, which has already appeared in the form of a pamphlet.

ROYAL COLLEGE OF SURGEONS IN IRELAND.—The following prizes were awarded for the summer session, 1910:—Barker Anatomical Prize (£26 5s.): T. Mather Thomson. Carmichael Scholarship (£15): M. J. Hillery. Mayne Scholarship (£8): J. S. Pegum. Gold Medals in Operative Surgery: J. S. Pegum and F. W. Warren (equal). Stoney Memorial Gold Medal in Anatomy: M. J. Hillery. Practical Histology: G. N. Smyth, first prize (£2) and medal; W. Morrow, second prize (£1) and certificate. Practical Chemistry: C. F. Coyne and M. J. Loftus (equal), first prize (£2) and medal. Public Health and Forensic Medicine: C. J. Sproule, first prize (£2) and medal; Vernon J. White, second prize (£1) and certificate. Materia Medica: M. J. Hillery, first prize (£2) and medal; Vernon J. White, second prize (£1) and certificate. Biology: L. S. O'Grady, first prize (£2) and medal; W. D. G. McCall, second prize (£1) and certificate. The lectures and practical courses of the winter session will commence on Oct. 15th.—The Barker Anatomical Prize of £21 is offered for competition in 1911 and is open to any student whose name is on the anatomical class list of any school in the United Kingdom. The preparations entered must be placed in charge of the curator on or before April 30th, 1911. The prize is offered for a dissection of the first, second, and third cervical nerves from behind. The preparations must be sent to the curator of the Museum, each being marked with a fictitious signature and accompanied by a sealed envelope bearing outside the same signature, and containing within the full name of the competitor and a declaration to the effect that the work of the preparation has been carried out by himself. The printed form necessary for this declaration can be obtained on application to the curator of the Museum, Mr. Arthur H. White, as can all the other particulars of the competition. The dissections for which prizes are awarded become the property of the College. Those competitors who enter dissections for which prizes are not awarded, but which show sufficient merit, may be refunded such amount of the cost of production as the examiners deem fit, but the cost and risks of transport must be borne by the student.

THE LANCET.

LONDON: SATURDAY, JULY 30, 1910.

The British Medical Association: The Address in Medicine.

RESEARCH in medicine has come in many minds to mean scientific investigation in laboratories, more especially physiological, pathological, and chemical. Dr. J. MITCHELL BRUCE in the eloquent, thoughtful, and suggestive Address in Medicine delivered before the British Medical Association at its meeting in London this week puts forward a weighty and well-considered plea for a wider conception of the scope and nature of research in regard to the problems of disease. He draws attention to the opportunities afforded to the family practitioner of contributing to the investigation of these problems, more particularly in regard to the complex subject of etiology. After a brief but striking review of some of the most important advances which have been made in medical science and practice during the 15 years which have elapsed since the Association last held its annual meeting in London, he draws attention to the general nature and character of the progress made. This, he rightly points out, has been chiefly characterised by a change in the general tendency and direction of investigation, so that instead of concentrating attention upon the lesions produced by disease we have advanced to the elucidation of the processes leading up to those lesions, the causes determining them, and the various influences controlling and modifying the actions of those causes. In other words, we are no longer satisfied with a knowledge of the effects of disease processes; we are more concerned with the manner of their development and with their causation. The recognition of the paramount importance of etiological considerations and of the closely cognate subject of functional pathology, as Professor J. G. ADAMI calls the study of the physiology of diseased organs, is regarded by Dr. MITCHELL BRUCE to be deserving of historical recognition as the dominant feature of the medical research of the past 15 years, and with this view we are in full accord. Moreover, the lay public has in some measure come to recognise the importance of these matters owing to the advances which have resulted in public and personal hygiene as a direct result of the application of modern knowledge, and they are as anxious to know the why and wherefore of cancer and other maladies of which the immediate cause is yet unknown as the most fervid investigator.

After demonstrating the fundamental importance of the doctrine of causation, Dr. MITCHELL BRUCE proceeds to analyse the nature of causative processes and of their relation to one another. Taking as an example acute infections, he differentiates three factors—first, the essential cause, which is specific in nature and extrinsic in origin; secondly, the patient's resistance, which is intrinsic; and, thirdly, those various conditions which favour the action of the exciting cause, and are usually classed as incidental, indirect, or predisposing causes. These are, of course, not essential, and may be either intrinsic or extrinsic. It is more particularly to this third etiological factor that Dr. MITCHELL BRUCE devotes the greater part of his address, pointing out the importance of these considerations to the practitioner, not only as most valuable aids to prognosis, treatment, and personal hygiene, but also as affording him valuable opportunities to participate in the advance of medical science. The bedside, the home, and the general environment of the patient offer fields for research as hopeful and as fruitful as the laboratory, and we cannot refrain from quoting Dr. MITCHELL BRUCE'S happy remark that the experienced practitioner "has learned that it is with a patient, not with a disease, that he is concerned, with a process, not with a lesion." Such a man appeals to the clinical laboratory when it can assist in the discovery of the exciting cause or in the determination of the organ at fault, but in his actual search for the cause of disease in his patients he has more often to rely upon personal observations of the subject, of his surroundings, habits, and mode of life, upon knowledge of particular family history, and perhaps upon general knowledge of human nature, the outcome of worldly experience.

These indirect, and often intangible, factors in the incidence of disease necessarily render the problems of causation complex, involved, and intricate: they can only be solved by a direct study of the patient, and consequently they come especially under the notice of the family practitioner and cannot be appreciated by anyone detached from direct association with patients. Dr. MITCHELL BRUCE gives many interesting and striking examples of the value of the information obtainable by such methods, while in no wise minimising the difficulties attending their application. At the same time he points out that not infrequently the conditions are sometimes such as almost to excite the envy of the scientist, since it is given to the practitioner to vary the conditions and circumstances of his patients' lives, and to study the effects with scientific precision. Among the many problems which are open to the practitioner to investigate he mentions the effects of the various conditions of daily life—work, diet, physical stresses, and "nervous" strains—upon the incidence of disease, upon the modification of its manifestations, and upon the actual symptoms, notably in regard to such events as relapses, complications, and recurrences. Again, the part played by inheritance can only be investigated on such lines, as well as the wider question of the influence of complex interacting causes upon the race and upon the individual. Public men are growing more and more to appreciate the sociological importance of such matters in relation to national health and hygiene, consequently the opportunities for research, which lie under the hand of the practitioner, must come to be of more and more pressing importance. It is especially to what we may designate as hidden causes that Dr. MITCHELL BRUCE directs attention. Our knowledge of the pathogenic properties of germs is of comparatively recent origin, and yet upon this fundamental discovery the whole fabric of

our knowledge of immunity, with its important practical results, has been erected. In like manner, Dr. MITCHELL BRUCE maintains, there are other causes concealed in numerous common occurrences, which only await discovery to yield fruitful information in regard to the prevention and treatment of many diseases; and it is important that the practitioner should realise his opportunities and his duties in these matters.

Dr. MITCHELL BRUCE'S choice of a subject for his address is fortunate and opportune. The delivery of such an address affords an admirable opportunity to some distinguished and experienced physician to call a momentary halt while he reviews the progress of medicine or ventilates some subject of public or professional interest. In drawing attention to the importance to the community as well as to the science and practice of medicine of the work of the family practitioner, he has performed a useful service. His weighty remarks are sure to attract attention, not only from their suggestive character and from the clear and eloquent manner in which they are expressed, but also because they tend to show the dignity of the calling of the ordinary practice of medicine, and to demonstrate that the daily round of work involves not only the practice of an art, but also the application of truly scientific knowledge and principles.

The British Medical Association: The Address in Surgery.

IN his choice of a subject for the Address in Surgery to be delivered before the British Medical Association Mr. H. GILBERT BARLING was very successful in taking an obvious course; for malignant disease, on which he spoke, is of prime interest to the operating surgeon, the consulting physician, and the general practitioner alike. The subject was therefore adapted exactly to the interests of a heterogeneous scientific audience, while the treatment was of practical value to that audience, for it consisted essentially of a review of the present position of our knowledge of the nature of and remedies for cancer.

Mr. BARLING points out, as will be seen by reference to the address which we publish in another column, that the idea prevailing at one time of the systemic nature of malignant disease had a harmful influence on surgical treatment, as it tended to limit the extent of the operations performed. For if a disease is really systemic in nature the removal of the local manifestations can have but little curative effect, while the frequent recurrence in the neighbourhood of the operation wound merely served to confirm the erroneous theory, for it was looked upon as a proof that the disease could return even though completely removed. That era of thought has now passed away, and all are agreed that the thorough local removal of malignant disease, when such removal is possible, is capable of effecting a cure. Much stress is laid by Mr. BARLING on the results obtained by experimental research on animals, and he describes some of the more important conclusions which these experiments have brought about, showing that the transplantation of carcinoma from one animal to another of the same species has been proved to be perfectly possible, but with this limitation, that success follows the experiment in only a limited percentage of the cases; and from this fact it may be argued that there is, in most cases, a natural resistance on the part of the tissues to the introduction of the foreign cells. As to the methods by which this resistance manifests itself, for the continued life of the inoculated tumour it is essential that a new stroma should be provided from the tissues of the host by proliferation of the connective tissue cells. When the transplanted tumour dies the death occurs partly from lack of nutrition and partly from the strangulating effect of the tissues amongst which it lies. An increase of the resistance of the tissues to the implantation of a malignant growth has been shown to be possible, and a very high degree of protection can be attained. We are now acquainted with the mode in which the immunised tissues overcome the transplanted growth, and this is well seen in the immunisation produced by radium; and Mr. BARLING describes how exposure to radium may cause the disappearance of some transplanted tumours, the most noticeable local change in these cases being an active proliferation of the connective tissue of the part, and an invasion of the parenchyma of the tumours by young fibroblast. As these develop they contract around and so destroy the cells of the malignant growth.

Closely analogous to these important results are various clinical observations. It is not, Mr. BARLING maintains, sufficiently recognised that in the human subject a struggle exists between the malignant growth and the tissues of its host. Cancer is not a constantly progressive disease, neither halting nor wavering in its course; but there is very definite evidence, both pathological and clinical, that the tissues do resist the invasion of new growths, and that between them and the malignant disease a real struggle goes on which occasionally ends in spontaneous cure. SAMPSON HANDLEY has shown that though the malignant growth spreads centrifugally from its point of origin into the lymphatics, yet many of the cells of the new growth are destroyed as a result of the action of the surrounding tissues. The new fibrous tissue attacks and destroys the cancerous epithelium. Unfortunately, the process is only partial; at one or even at many places destruction may be going on, and elsewhere the malignant cells may be multiplying freely. Malignant emboli lodging in the vessels of the lungs and other tissues become surrounded by a new connective tissue which has developed from the intima of the blood-vessels. And in many cases this new connective tissue suffices to put an end to the malignant cells of the embolus. There is good evidence for thinking that this destruction of cancerous emboli is the rule rather than the exception, and that malignant metastases occur only in those few cases where the cancerous cells have survived. If it were not so, it is probable that metastases would be far more common than they are. All surgeons are aware that malignant growths vary greatly in their rate of progress, and sometimes a growth may even disappear spontaneously. These variations in the rate of progress of malignant disease are, in all probability, due to variations in the resisting powers of the tissues; and this explanation is rendered still more probable by the history of those cases in which recurrence of a cancer occurs many years

after a successful operation. Some small collection of cells has not been destroyed, but has been held in check, even for years, and at last, in favourable circumstances, it has renewed its activity.

Finally, Mr. BARLING discusses the question of the treatment of malignant disease. He acknowledges the value of the X rays in some forms of malignant growths, but he himself has never known a growth certainly malignant to disappear absolutely under the X rays, and therefore he does not assent to some of the claims made for the rays. As to the value of radium, he expresses his appreciation of its action in the relief of pain, in the cessation of discharge, and in the cicatrisation of an open sore, but he does not consider that radium should, in the present state of our knowledge, be employed as a substitute for excision in cases of operable malignant growth. Of the true value of excision he speaks with no uncertain words, claiming that our results at the present day show that with careful attention to the prevention of sepsis, and with extensive and thorough operations, the results now obtained are by no means unsatisfactory. Where complete excision is possible the proportion of permanent cures may be great, and the main desideratum for the future is an earlier recognition of the disease and its earlier removal. And he believes that the means for recognising the presence of malignant disease at a very early stage may be provided by the ever-increasing study of biological chemistry, especially looking forward to a time when the danger and the distress incident to operative measures may be replaced by gentler means provided by the twin sciences. The address consequently is encouraging and hopeful, and serves as a useful reminder of the progress which has been, and is being, made in the treatment of cancer, and in the acquisition of knowledge as to its natural history and characteristics.

Scientific Faith-healing.

THERE is probably no department of knowledge where exactitude is more required and at the same time is harder to come by than the department which concerns the influence of the mind upon the body. Nor, it may be safely said, is there one which provides the layman with greater interest or the medical man with greater perplexity. At the present time, when such an active concern both against and on behalf of the doctrine of "Christian Science" and allied cults is manifested on all hands, it behoves every medical man to consider carefully for himself what we actually know and what we do not know where the relations of mind with body are concerned. Moreover, it is well for him to reflect a moment upon problems which are usually regarded as beyond his sphere and to be ready not to relegate ghosts, spiritualism, and hypnotic phenomena into one vague conglomeration classed as "humbug"; on the contrary, he should take every opportunity of separating the known from the unknown and of showing the lay inquirer that the phenomena of hypnotism, for example, may be scientifically produced and studied, while "ghosts" and "spiritualistic" appearances are as yet, to say the least, unproved. Nearly related to these questions are the many intricate problems of psychology, where we pass insensibly into the domain of genuine organic nervous diseases with their multifold mental and physical symptoms. Here the medical man is on surer ground, but, where psychology is concerned and an intimate acquaintance with its facts and its laws is demanded, we are bound to admit that the present-day training of the medical practitioner still leaves much to be desired. Inevitably is this the case when we consider the mass of learning to be acquired by the student of to-day in matters of definite medical and surgical diagnosis and treatment. Psychology is largely shouldered out by her older sisters. Yet in dealing with human beings, as it is the medical practitioner's business to do, there is no more certain help to him in understanding and influencing his patients than an acquaintance with the methods and the knowledge of the modern psychologist. Human beings tend to lean upon the unknown. There is an inclination to trust that of which we are vaguely conscious, an inclination deeply rooted in human nature, a tendency from which sprang the earliest beliefs and practices of worship. It is on this soil that the growths of spiritualistic belief spring up, and it is from the same source that many of the offshoots of hysteria and of various psycho-pathological manifestations are nourished. How important, then, is it that the medical man should realise this attitude of the human mind and should be able to point out at once the truth of its existence and the uncertain nature of its products. We are not about to maintain that physical science has conquered the whole field of human wonder and speculation. We believe that the absolute materialist is as little perfect in his conception as the absolute idealist, and we know that the greatest products of the human brain, as well as the sweetest consolations of the humble mind, may arise alike from the promptings of that which we call faith. Nevertheless, it is all-important for us as medical men to be able to protest when faith claims as scientific truth that to which she has no right to put such a name; and still more is it our duty to contradict those who, falsely shielded under the banner of science, tamper with the minds of such credulous persons as entrust their bodily welfare to untrained and incompetent guardians.

Faith-healing, which results in beneficial effects upon a bodily condition due to an altered state of mind, has of course a large place in the art of medicine. There is no successful practitioner who does not exercise this function every day of his life. No one knows better than the medical man the importance of inspiring confidence in his patient; no one feels more fully how vastly the effect of his remedies and advice differs upon those who are ready to believe in his words and follow his instructions and upon those who listen grudgingly and follow with reluctance or not at all. Till to-day, however, this amount of faith-healing, this exercise of the practitioner's mind over the mind of the patient, has been used by the medical profession in almost an unconscious manner; at any rate few steps have been taken to define those cases in which this form of medical treatment may be supreme and essential from those more ordinary cases in which mental effect is merely a beneficial adjunct to remedies which will provide a cure even without its aid. The time has come, we believe, for a revision of our professional

attitude in this matter. When the public realise that medical practitioners can help those who need that kind of mental support which they are not generally prone to look for in the ranks of the medical profession, then there will be little scope for the "mental quacks" who abound and into whose hands falls many a case where the wanted something cannot be supplied by persons devoid of medical training. To treat these cases of persons who, if they cannot be definitely classed in the nomenclature of disease, are often on the verge of neurasthenia, hysteria, lunacy even, is no light task, and is not to be regarded as a function unworthy of the efforts of the trained medical man. Rather would we maintain that the importance and the interest of these cases increase directly in proportion with the psychological training and knowledge of those into whose hands they fall. It is such knowledge and training that enable a man to effect in someone who is under his influence changes for the better, of a kind more valuable than those brought by appropriate drugs. To turn the wavering, the despondent, the drug-seeking into the buoyant, the energetic, the independent, to snatch from the gloomy toils of melancholy or the lethe of alcohol men and women who have many years of life before them, and to render those years active and happy to the individual and of benefit to the community—to do this is, surely, to perform a task of which any medical man may be proud. Tasks of this nature ask frequently for performance in the social conditions of to-day, and fall in increasing numbers upon the shoulders of the medical profession. Cases there are, no doubt, where the help needed is of too purely spiritual a kind to be appropriately undertaken by anyone but a clergyman. There should be no difficulty here in relegating the task from the medical man to the priest, where it is known that the transference of the patient will leave him in the hands of a man fully qualified to undertake the highly responsible duties that devolve upon him. In no sense can this be said of the "Christian Scientist" or "healer" of to-day whose efforts, altruistic though they may ostentatiously be, too often result in effect in nothing but the passage of a certain number of guineas from the pocket of the sufferer to the coffers of the cult.

In another column we review four books on this subject of hypnotism. In one of them, Dr. I. W. HEYSINGER'S book, there is to be found little that will help our readers in the understanding of the treatment of psycho-pathological problems, though much, we are bound to admit, that will help them to see how easy it is to confuse the known and the unknown, and to state as facts ideas which are the issue solely of an enthusiastic but ill-equipped judgment. The other three books, fortunately of smaller size than Dr. HEYSINGER'S volume, contain valuable information. Dr. HUGH E. WINGFIELD'S little "Introduction to the Study of Hypnotism" gives a concise statement of what should be meant by hypnotism, and also of its value, its limitations, and the methods by which it should be employed. In a certain number of the cases to which we have alluded, hypnotism properly exercised by a medical man affords the best chance of relief. It is, as the reader of Dr. WINGFIELD'S book will see, not a mode of treatment to be lightly employed—a truth that will also be gathered from Dr. HOLLANDER'S popular exposition. But related, and perhaps less alarming, forms of what we may call suggestive treatment are frequently required. Of these both Dr. WINGFIELD and the writers in "Psychotherapeutics" give many examples, besides explaining the scope and action of suggestion in all its forms. We recommend a perusal of these books to our readers because we are convinced that too often the mere words "suggestion," "hypnotism," and so forth, convey to the medical man the idea of something which he had better avoid. In our opinion he should, on the contrary, realise that these forms of treatment contain nothing that is undesirable when properly applied in suitable cases. We have written these words in vain if we have not made clear our belief that suitable cases are not infrequent, and are likely owing to the conditions of modern life to increase in number. At present these cases are too often maltreated by the quack.

Annotations.

"No quid nimis."

BRITISH MEDICAL ASSOCIATION: THE PRESIDENTIAL ADDRESS.

THERE are a certain number of fortunate people who are able to begin the arrangement of their day by allotting so much time to sleep—as much or as little as they like; so much time to meals—and, again, as much or as little as they like; so much time to the cultivation of intellectual pursuits; and so much to the maintenance of physical health by recreation: any time that is left over is devoted to the duties of a workaday world, and sometimes those duties are none the worse discharged for the restful manner in which they can be undertaken. To this class but few members of the medical profession—practically none—can belong, while the leaders of that profession are day by day more inevitably forced to reverse the whole process just described, and to allot of their 24 hours day a substantial fraction like two-thirds of the day to work, the preparation of work and the finishing off of work, leaving sleep, meals, and intellectual and physical recreation to fight among themselves for the remaining fraction of time. These reflections come into our mind as we contemplate the sort of week which Mr. Butlin, as President simultaneously of the Royal College of Surgeons of England and of the British Medical Association, at the time of a meeting of that Association in the metropolis, must be living; but it is clear from his Presidential Address, which we publish in another column, that he is undertaking his onerous duties in no perfunctory spirit, that he knows the past and present of his Association, and that he has resolved that under his hands it shall proceed upon successful lines. His Presidential Address needs no exposition whatever, it is itself an exposition. It is a clear and faithful history of the progress of the Association during the past half-century. We recommend all members of the Association to read it carefully, for they will be able to understand by so doing the constitutional reasons for and against proposals of development in various directions, which means to say that they will appreciate what is and what is not the direction in which to move. One passage only of Mr. Butlin's address prompts us to a personal remark. In his Whistlerian etching of Mr. Ernest Hart he speaks rightly of the life and vigour which Hart infused into the pages of the *British Medical Journal*, and he indicates

surely that it was the rise of the *British Medical Journal* to the great paper that it is which enabled the Association to reach its present position. Mr. Hart came to the *British Medical Journal* as a fully equipped editor because he had been for some time the assistant editor of THE LANCET. He owed to his late position his intimate knowledge not only of the politics and mechanics of journalism but also of the *personnel* of the medical profession. It is undoubted that this fact was recognised with considerable soreness by THE LANCET in those bygone days; but the hatchet has now long been buried and we refer to the matter as one purely of historical interest and a source of complacency to ourselves. We are glad to notice that so wise and temperate an observer of men and things as Mr. Butlin attributes in the main the origin of the good fortunes of the British Medical Association to the work of the Journal of the Association, now edited with such conspicuous ability and fairness by Dr. Dawson Williams, assisted by Mr. C. Louis Taylor. It is in no way to belittle the work of others that we endorse this view, taking at the same time the opportunity to acknowledge the kindness and courtesy of the organ of the Association to THE LANCET on many occasions.

THE BUREAU D'HYGIÈNE.

THE municipal council of Havre is fully entitled to claim credit for its leading action in the creation of that centralised form of sanitary administration that goes in France under the name of Bureau d'Hygiène. We have now reached the thirtieth anniversary of the inauguration of the first French Bureau d'Hygiène, and the municipality of Havre has issued a pamphlet giving a brief history of the movement, written by Dr. Ch. Vigne, adjoint to the Mayor, and Dr. Andrien Loir, director of the Bureau d'Hygiène. It was on March 18th, 1879, that on the proposal of the three municipal councillors, Dr. Gibert, Dr. Fauvel, and Dr. Lafaurie, the municipal council decided to establish a Bureau d'Hygiène. No one acquainted with sanitary work in France will fail to remember how much the cause of public health owes to the late Dr. Gibert of Harve. In these columns we have often had occasion to describe the good work he has done. In 1877 M. Jules Siegfried, the well-known statesman, was Mayor of Havre, and Dr. Gibert was then agitating against the inefficiency and confused state of the public health services. M. Jules Siegfried fully appreciated the justice of these complaints and persuaded Dr. Gibert to plead the cause of reform within the municipal council. Dr. Gibert had no taste for party politics, but he presented himself as a sanitary reform candidate and used with some humour to boast that he owed his election to the working-class electors, for none of his patients voted for him. His next step was to travel to Turin and then to Brussels so as to study what had been done in these towns. In Belgium he had good cause to admire a Bureau d'Hygiène already established by the late Dr. Janssens, with the aid of the Haussmann of Brussels, the Burgomaster Anspach. Dr. Gibert returned to France brimming over with enthusiasm, and explained that the Bureau d'Hygiène of Brussels was an administration that did not neglect the smallest detail, but in the interests of public health succeeded "in knowing everything, seeing everything, and inspecting everything." Strengthened by this example and with the aid of the other medical men who were municipal councillors, Dr. Gibert succeeded in persuading the council to vote in favour of establishing a Bureau d'Hygiène in the city of Havre. Here was concentrated the control of all the sanitary services and the vital statistics. Births, deaths, marriages, all compulsory notifications of disease, unwholesome dwellings, defective sewers, and so on, have to be recorded at the Bureau d'Hygiène. The staff at present consists, apart from a consultative commission elected by the municipal council, which may be compared to the sanitary committee of a borough council in England, of a permanent medical director, Dr. Loir, three medical members of the bureau, and three assistant medical members. Then there is M. Laurent, the administrative chief of the bureau, and a clerk to assist him. Further, we have a chemist and two inspectors of nuisances, a disinfecting staff, a mechanical engineer, a trained nurse, and a coachman. At a later date a chemical and then a bacteriological laboratory were opened in connexion with this institution. It naturally follows that other French towns began to imitate the example set at Havre. But a greater tribute to this initiative was to follow. When, after many postponements, the Government introduced a general Public Health Bill, destined to place French sanitary legislation on a level with modern requirements, it was decided that the Bureau d'Hygiène, founded at Havre by the late Dr. Gibert, should be the model of the sanitary administrative service in all towns. Thus the great Public Health Act of 1902 renders it obligatory for all towns with more than 20,000 inhabitants to establish a Bureau d'Hygiène on the Havre model. Much has been, and might be, written to describe what the Havre Bureau d'Hygiène has accomplished to be selected as an example. For the moment it may suffice to say that no great sanitary scheme has been carried out at Havre, such as a new water supply or general drainage scheme. The improvements effected are in matters of detail and in administrative efficiency. Nevertheless, the result is that when the Bureau d'Hygiène was instituted the average death-rate for the first five years, 1880 to 1884, was 31·1 per 1000 inhabitants., while during the last five years, 1905 to 1909, it was 24·05 per 1000.

FATAL ATTEMPTS TO SELF-INDUCE ABORTION.

FROM distant quarters of the English-speaking world cases have recently been reported of the fatal results of attempts to induce abortion by women who were pregnant, or believed themselves to be so, in which the methods used were unusual. In the *Journal of the American Medical Association* of April 9th Dr. B. Lankford has reported the case of a married woman who menstruated for two days instead of the usual four, and feared that she was pregnant. A week later, by the advice of a friend, she inserted two tablets, each containing 7·3 grains of mercury bichloride, into the vagina. Great pain followed and Dr. Lankford was hurriedly sent for, and saw her two hours later. He found the labia swollen to at least the thickness of an inch, very red, tense, and shiny. Owing to the swelling a vaginal examination was made with difficulty and the entire vagina and vaginal portion of the cervix were found in the same brawny state. Realising the urgency of the case he made a gallon of strong soap solution and emptied into it the contents of a box of cooking soda. This solution he used as a vaginal douch. Then he placed the patient in the genu-pectoral position, and using the handle of a bent tablespoon as a Sims' speculum poured the white of five eggs into the vagina (the white of one egg neutralises about 4 grains of bichloride). After this the patient was under the care of her own physician, and Dr. Lankford did not see her for a week. When he did he found a pitiable change. Previously a pretty woman, he could not have recognised her. The face, neck, and chest for several inches below the clavicles were swollen, the eyes were closed, and the tongue was so swollen and protruding that the lips were forced apart. The tongue and buccal mucous membrane were greyish-black and sloughing. The teeth were loose enough to be spit out, and the breath was fœtid. Bloody muco-purulent stools were frequently passed. The

mind was clear but articulation was rendered impossible by the swelling. She did not complain of pain and the abdomen had never been tender or tympanitic. The pulse was 130 and the temperature 101·5° F. The mouth was irrigated with solutions of potassium chlorate, phenol 1 per cent., and hydrogen dioxide 25 per cent. White of egg and milk, which could be swallowed fairly well, were given. The condition of the mouth improved, and the temperature fell to normal. The motions became more watery and the tenesmus diminished. But on the tenth day the pulse became quick and soft and the patient drowsy, and death took place two days later. A necropsy was refused. In the *Australasian Medical Gazette* for April Mr. A. Palmer has reported the case of a widow, aged 24 years, who gave herself a vaginal injection. She jumped up quickly and said she was in terrible pain and that her stomach was swelling. Almost immediately she collapsed, clenched her teeth, frothed at the mouth, and died. This history pointed to death from air embolism. At the necropsy small hæmorrhages were found beneath the visceral pleuræ and larger ones beneath the diaphragmatic pleuræ and the peritoneum. The lungs were œdematous and engorged with dark blood. The right side of the heart was distended with dark fluid blood containing bubbles. The liver was greatly engorged. The uterus was enlarged and unusually soft even for pregnancy. It contained a male fœtus 8½ inches long. The amnion was stripped off the lower pole of the uterus but was not ruptured. The placenta was situated anteriorly and was torn below. The mucous membrane of the vagina appeared to be whiter than normal. A packet of sulphate of zinc was found in the room and traces of manganese, while zinc had been used in a syringe. A similar case in which the drug used was potassium permanganate was recorded in the *Australasian Medical Gazette* for April, 1909.

HOUSE REFUSE DEPOSITS AND FLIES.

IN view of certain special reports on epidemic diarrhœa in the years 1904 and 1906 made by Dr. J. T. C. Nash to the town council of Southend-on-Sea, as well as numerous writings by him on the subject, the reported plague of flies at Postwick, a Norfolk village only a few miles out of Norwich, is invested with special interest. The contention of Dr. Nash, now the county medical officer of health of Norfolk, urged in his reports and elsewhere, that large deposits of house refuse are responsible for great plagues of flies in warm weather, appears to be confirmed in the present instance almost within the capital of his sanitary jurisdiction, for we learn that 40 tons of Norwich city refuse have been daily deposited on Whitlingham Marshes since the beginning of the year, so that by now several thousands of tons of putrefying filth lie on these marshes within less than three-quarters of a mile of Postwick village as the crow flies. No intervening village acts as a place of arrestment for flies bred in millions in this horrible festering mass of mess, but at least three factors save Portwick village from an even worse invasion of flies: (1) the flies have to cross the river; (2) the ground rises sharply on the other side to a height of 50 or 60 feet; and (3) since April the greater part of the huge heaps of refuse have been covered over with earth and turfed. An important point which has hitherto not been definitely decided is the range of flight of flies. Dr. Nash in the *Journal of Hygiene* for September, 1909, has said that from a large breeding place, such as tons of house refuse on a brickfield, flies will travel in countless battalions to the nearest houses which may be two or three hundred yards away. His view was that in warm weather the flies travelled further, and would be found in considerable but decreasing numbers in houses within one-third to half a mile distant, each street and terrace of houses forming a place of arrestment, "provided there is abundance of pabulum whether in the nature of filth or ordinary articles of human diet. Where few or no houses intervene flies in large numbers will travel considerable distances — even over half a mile." In the present instance there are no places of arrestment in the shape of houses in terraces between the village of Postwick and the refuse heaps over half a mile away, and flies have travelled the intervening distance in such numbers as to be a veritable plague, and to induce Dr. H. H. Back, the district medical officer of health, to make a strongly worded report to his district council. Dr. Monckton Copeman has investigated the matter for the Local Government Board. In these days of enlightenment it can hardly be looked upon as other than a sanitary sin for the house refuse of a large city to be disposed of by "dumping" instead of being destroyed by fire in properly constructed refuse destructors. Fortunately, the population of Postwick is very small, and the number of infants in the village can be counted on the fingers. Fortunately, also, the weather in the neighbourhood has been cool and frequently wet for some weeks past, confining the flies to their breeding-places, otherwise more might have been heard of the matter from an epidemiological point of view.

THE TRANSMISSION OF TRYPANOSOMA GAMBIENSE.

The Eighteenth Bulletin of the Sleeping Sickness Bureau contains among other interesting matter an important editorial article in which the transmission in nature of Trypanosoma gambiense is discussed. Our readers are aware that for some time it has been generally believed that with respect to the transmission of sleeping sickness in nature we could afford to disregard other species of glossina and concentrate our energies on G. palpalis, since the former were thought to be harmless. It would appear, however, that recent facts have given rise to doubt as to the correctness of this former opinion. A number of cases of sleeping sickness originating in Rhodesia and Nyasaland were believed to have been infected in one or other of two localities—viz., (1) the Luangwa Valley or (2) the shores of Lake Nyasa, in neither of which has G. palpalis, so far as is known, been found. Both of these localities are low-lying, as well as relatively warm and moist; and in both are found two species of glossina—viz., G. morsitans and G. fusca. It is considered not improbable that both of these species, and especially G. morsitans, may be responsible for transmitting sleeping sickness to man in these regions. There are, however, other localities abounding in G. morsitans where as yet no sleeping sickness has been detected, the explanation of this being, probably, that such places are at a comparatively high altitude, where the air is cool and the humidity low. So that the suggestion is that G. morsitans is harmless to man when it occurs on open and relatively high ground; and, on the other hand, it is probably dangerous, in the presence of a sleeping sickness "reservoir," when inhabiting damp and warm valleys. It is also suggested that possibly the development of the trypanosome in the body of the glossina, which development it is to be remembered according to our present knowledge occurs in favourable circumstances only in about 5 per cent. of these flies, does not occur at all in certain conditions such as relative cold or dryness. There are other known instances of such climatic influence upon insects. If, therefore, climate should prove to have such an influence in the case of human trypanosomes, G. palpalis must be regarded not as carrying sleeping sickness because it is the only species of tsetse fly suited for the development of this organism, but because it haunts low-lying moist valleys and is pre-eminently the species

which attacks man. This view has already met with some support from investigators, particularly from some of the workers of the Liverpool school. On this hypothesis, given suitable climatic conditions, tsetse flies of any species may harbour the human trypanosome and become the agent in its transmission to man. If, unhappily, it be demonstrated that species of glossina other than palpalis can actually, as suggested, under certain conditions serve as hosts of Trypanosoma gambiense it is evident that the difficulties of the prevention of sleeping sickness will be enormously increased. To settle any doubts on this important question it is obvious that detailed experiments will have to be carried out under the necessary conditions and in different localities with the other species of glossina, more especially with G. morsitans. The other subjects dealt with in this bulletin include trypanosome transmission experiments, trypanosomiasis in relation to other infections, eye affections in trypanosomiasis, the treatment of trypanosome infections, chemo-therapy, sleeping sickness news, and the usual monthly list of references.

SIGHT-TESTING AND THE LONDON COUNTY COUNCIL.

THE recent suggestions of Dr. J. Kerr to the London County Council, which that body is about to carry into effect, have produced quite a flutter of agitation amongst the sight-testing opticians. The proposals of Dr. Kerr to which such strong exception is taken contain the following sentences in speaking of the medical examination of the school children. He says that spectacles may be wanted but "should only be worn when prescribed by a doctor"; "they should never be obtained from an optician or eyesight specialist unless they have been prescribed by a doctor." To bring this home to the parents or relatives of every child half a million circulars are to be distributed. This is the cause of offence to the opticians and is the subject of an out-spoken leading article in the *Optician and Photographic Trade Journal* of July 15th. We are unable to see why such a proceeding should "stir up a sense of insupportable injustice" amongst the opticians, or why the issuing of such instructions should be regarded as nothing less "than a gigantic collective advertisement of medical men." The treatment required for diseases and defects of the eyes is and always has been part of the physician's and surgeon's duties. The opticians in claiming the right to regard these duties as properly belonging to themselves are distinctly invading professional territory. It is, in fact, a back-way of entry into the medical profession. Many cases no doubt are met by a supply of appropriate lenses, and by attention to visible and very obvious conditions to be relieved by simple means, but many require much more and quite other treatment. It is beside the mark to point to hundreds of cases relieved by the use of simple glasses if some cases, by reason of ignorance, are not only not relieved but positively damaged, however accurately the errors of refraction are compensated. Yet how are cases when failure of sight is dependent upon renal, cardiac, or cerebral disease to be adequately dealt with by an optician's assistant? The medical profession has, in the interest of the public, as well as for its own standing, safeguarded the entry into it of incompetent men by insisting that a certain curriculum shall be gone through. This course includes attendance upon lectures, the practice of dissection (which is tested, and severely tested, by examination on the dead body), and attendance in out-patient departments of special organs, of the eye, ear, larynx, and skin, and in the wards of general hospitals. In this way familiarity with general diseases, with therapeutics, and with the art of prescribing is acquired. In addition, the medical man is surrounded by a general medical atmosphere in societies, in friendly discussion, in papers read at meetings amongst students, and in the graver articles of the medical press. In every one of these means of education the young optician is defective; and yet on the strength of being able to recognise and rectify the errors in a physical point of view of a single organ, he desires to thrust himself, as we have said, by a back-way into the medical profession. The opticians may well be content with the proceeds of their labour. We do not doubt that a well-instructed optician will make out a case requiring glasses as well as any member of the Ophthalmological Society, but the selection of glasses is not all that is required—is not, indeed, the most important part of the treatment. We think that Dr. Kerr has given wise counsel to the County Council in recommending that such children as require glasses should be sent to a medical man in the first instance; in fact, we would go farther, and in the interests of national health, we think it imperative that every child should be examined from an optical point of view. It is, in fact, only by such wide observations that general results can be obtained which may prove of high importance in war, in the arts, and in estimating capability for work or proper compensation for injury.

A PERSONAL EXPERIENCE OF SPINAL ANALGESIA.

IN the *Journal of the Royal Army Medical Corps* for April Captain J. Dorgan, R.A.M.C., has reported an interesting personal experience of spinal anæsthesia. He was operated on for radical cure of right inguinal hernia under spinal anæsthesia. He lay on the right side on the table with his knees drawn up and lumbar region arched. Stovaine was injected between the second and third lumbar spines. He felt the slight prick of the needle in the skin, and after waiting anxiously for the further introduction of the needle into the spine, from which he expected pain, he asked the operator when he was about to inject the stovaine and was agreeably surprised to hear that it had been done some time previously. After a minute or two he began to feel a warm glow spreading down the right leg, accompanied by a sense of tingling and a feeling as if the leg was becoming swollen. Five minutes after the injection a pin-prick in the third right lumbar area was felt only as a pressure, as if pressure had been made with the finger-tip, whilst immediately below in the leg the point could be definitely felt as such. Loss of tactile sensibility rapidly passed down the leg to the toes and when a pin-prick was no longer appreciated he could still move his ankle and toes. The left side and leg, which so far were uppermost, were affected only to a slight extent. After about six minutes the right leg felt heavy, congealed, and immoveable, and anæsthesia was absolute. Captain Dorgan was then turned on his back, and the operation was commenced about ten minutes after the injection. Similar sensations now began to develop in the left side, but the effect never appeared to be so complete as on the right. He did not know when the operation was begun and was only able to guess by the sound of the forceps and the movements of the operator. The skin incision caused a slight feeling of pressure in the region of the left inguinal canal. Throughout the operation any sensation appeared to be referred more to the left side than to the site of operation. There was slight consciousness that the cord was being touched while it was being manipulated. He was asked to cough, and when he did so he felt as if the abdominal contents were being forced down on to a semi-congealed and solid mass in the pelvis. When the conjoined tendon was being stitched to Poupart's ligament he felt with each stitch as if the skin over the spleen was being pressed upon by a

warm body, and was not convinced that the feeling was unreal until he placed his hand over the part. Towards the end of the operation, about 40 minutes after the injection, sensation began to return. At first there was a feeling as if the part was being irrigated with a stream of tepid water. When the superficial stitches were being passed there was a feeling as if they were being forced through with a blunt instrument, but the sensation was not painful, and for the first time was referred to the wound. During the whole operation he felt no pain and was conscious of no constitutional effect. His pulse was normal and he chatted to those around him as if he was assisting at the operation. On being put back to bed he felt collapsed and sick for about five minutes, otherwise he was quite well. At this time the left leg had practically recovered, but the right was still immoveable and felt thrice as large as the other, and he was not conscious of its position. About two hours after the injection all signs of the action of stovaine seemed to have disappeared. As sensation returned intense pain was felt in the wound; it lasted for six hours and then gradually passed off. Though free from pain he suffered from insomnia for three nights. There was never any headache or backache.

BERI-BERI IN THE UNITED STATES.

ALTHOUGH beri-beri has of late years been frequently reported from South America, and more particularly from Brazil, little mention has been publicly made of the disease hitherto as occurring in North America. In the weekly issue of *Public Health Reports* for July 1st the Surgeon-General of the United States Public Health and Marine Hospital Service draws attention to the occasional occurrence of beri-beri in the United States, and invites health officers and others who have knowledge of such cases to report them to him at Washington in order that investigation may be made and the precise number of such instances, and the geographical distribution of the disease, may as far as possible be ascertained. He gives a brief reference to some of these outbreaks which have occurred during the past 20 years in North America. They have been chiefly reported from lunatic asylums, prisons, or other public institutions, though mention is made of one outbreak which affected fishermen in New England. Among the States of the Union in which beri-beri outbreaks have occurred in recent years may be mentioned Alabama, Arkansas, Texas, California, and South Carolina. As is well known, the disease is most commonly met with among the Asiatic races whose staple article of diet is rice. There are in the United States a considerable number of Asiatics, Chinese and Japanese, among the general population. It is, of course, possible that some of the reported beri-beri outbreaks in the United States have occurred among these Asiatics, and that the cause of the disease has been associated with the consumption of rice. It has to be borne in mind that beri-beri is not a disease which can be easily diagnosed by those who are unacquainted with its peculiar features, and that, as a matter of fact, it is liable to be confused with other maladies, such as ankylostomiasis and alcoholic neuritis. It is just possible that the malady may have been present in North America for a long time, unrecognised or classed under some other name, and that its presence has only recently come to be known. In the Surgeon-General's memorandum, already mentioned, a short sketch is given of the present views held by the medical profession respecting the etiology of beri-beri, and a brief account is given of the recent experiments, which were carried out in the Medical Research Institute of the Federated Malay States, and which led Fraser and Stanton to attribute the origin of the malady to a deficiency of phosphorus in the diet.[1] This deficiency was caused by the removal, in the process of milling, of the superficial layers of the rice-grain in which is contained the highest proportion of phosphorus. It is quite possible that it may be found that, altogether apart from a preponderance of rice, a dietary might be constituted in a public institution so as to contain an insufficient amount of the phosphorus which is necessary for the nutrition of normal nerve tissue, and that in this way an outbreak of beri-beri might arise among the inmates of the establishment. The dietaries of asylums, prisons, and the like are often monotonous and lacking in variety, and their continued use for protracted periods may lead to deterioration of health. It is therefore probable that careful investigation of reported beri-beri cases by competent experts, under the direction of the Surgeon-General, in the public institutions of the United States, may add to the common stock of knowledge respecting this interesting disease, more especially as to the way or ways in which beri-beri may occur among a white population not consuming rice as their staple article of diet.

[1] THE LANCET, Feb. 13th, 1909, p. 451.

THE TREATMENT OF LEPROSY BY NASTIN.

IN a recent issue of the *Transvaal Medical Journal* a highly interesting account is given by Dr. Gordon B. Messum, late visiting medical officer to the Pretoria Leper Asylum, of the simultaneous treatment of 20 cases of leprosy by Deycke's nastin. It appears that Dr. Messum had been favourably impressed by reading the various published reports of Professor Deycke's work, and had determined to give the treatment an impartial and prolonged trial. For this purpose he selected 20 patients from among the others in the asylum as representing the various types and stages of the disease. Arrangements were made to ensure a fresh supply of the remedy every month from Europe. The duration of the treatment varied in different cases from six months to a year and a half. The majority of the patients had weekly injections of 1 cubic centimetre of nastin B_1; in three cases nastin B_2 was used, and in one instance ketyn alone was employed. During the time this treatment was being carried out no other remedy was given, so that whatever changes might follow the use of nastin, to it alone could they be ascribed. In reviewing the results Dr. Messum remarks that in only three cases could anything like a "reaction" be observed after the injection of the remedy; but this "reaction" does not appear to have been the precursor of any improvement in the patient. With apparent reluctance Dr. Messum comes to the conclusion that from a clinical standpoint no decided or definite action can be attributed to nastin in any of his cases. It is worthy of mention that many of these 20 patients at first declared that they were greatly benefited by the nastin injections, and that their general health had improved. But this feeling after some months gave way to doubts with regard to the efficacy of the remedy, and finally most of them decided that they had derived no benefit at all from it. Some, indeed, asked to resume the chaulmoogra oil treatment. The apparently good effects at first produced by the injections were doubtless due to the confident and hopeful anticipations which the use of the remedy had inspired. This condition of mind is not unknown to practitioners of experience in cases where their patients enter on a new form of treatment with a blind and unfaltering faith in the drug. By way of testing this, Dr. Messum treated one of the other patients in the asylum who had been clamouring for nastin with injections of saline solution, the patient being under the impression that he was receiving nastin. Like the others, he at first expressed himself as feeling much benefited by the treatment. Dr. Messum's

results generally are not unlike those obtained by Dr. J. Ashburton Thompson in the New South Wales lazaret and reported by him in his annual report for 1908, in which he said that in his hands nastin behaved like an inert substance. Dr. Heiser of Manila also failed to obtain satisfactory results from a trial of this remedy in a number of cases. On the other hand, Professor Deycke's published reports showed most gratifying improvement in his patients after the nastin treatment. Other observers in various parts of the world have also reported favourably upon the use of the remedy; among these may be mentioned Major C. E. Williams, I.M.S., who treated several cases at Bushire in the Persian Gulf with marked benefit. We understand that Professor Deycke, with the approval of the Colonial Office, is carrying out the prolonged treatment of a series of leprosy cases in the Government institutions of British Guiana and elsewhere. As this trial has already lasted upwards of two years we may probably expect shortly to see Professor Deycke's detailed report, which should prove interesting reading. It must not be forgotten that nastin can only be obtained from Europe, and from one firm of manufacturing chemists in Germany, at Biebrich on Rhine; and that it is not improbable that in certain circumstances the remedy might lose some of its activity and undergo deterioration during the long voyage to a tropical country. This might explain the conflicting reports as to the activity of the remedy when employed in Africa or the Far East. There is another difficulty which arises in estimating the value of one drug or another in the treatment of leprosy. This disease left to itself is often erratic, at times remaining stationary for long periods or undergoing apparently a spontaneous arrest; at other times it breaks out in local exacerbations, or it may spread slowly and steadily to a fatal termination. Remedies applied at one or another of these phases of the disease might receive undeserved praise or blame, as the case might be. The question as to the true value of nastin as a specific cure for leprosy must be regarded as being still *sub judice*. In our opinion further experience of its use on a large and extended scale in leper establishments is needed in order to supply the evidence on which its acceptance or rejection by the medical profession must ultimately depend.

THE CONQUEST OF ROAD-DUST.

IT is satisfactory to learn from a notice sent to the county councils by the Secretary of the Road Board that the tar-painting of the roads throughout the country is proceeding apace and that already much useful work has been done. Indeed, a writer in the *Times* says that without indulging in any undue optimism we are within measurable distance of seeing all the main roads of England rendered dustless. If that is to be a near consummation, then we agree with the writer that "motorists, travellers of every kind, owners of wayside property, pedestrians, and ratepayers will be considerable gainers and the public health must also improve as well." Road-dust has probably been the most evil nuisance which the motor-car has thrust upon us, widespread mischief up and down the great roads of the country has been done, and it is fortunate that a remedy has so comparatively quickly been found and that public authorities have been so ready to apply it. The credit of pioneer in this work belongs to the Kent county council, whose officers have been hard engaged for some years upon practical inquiry into the several methods which have been brought forward. Tar-painting of roads is not without its drawbacks. It has caused damage to private horse vehicles and to personal clothing, but it must be admitted, we allow, that these incidents are trifling compared with the far-reaching mischief of the motor dust-storm. Moreover, tar-painting must preserve the road surface itself, and the sucking out of its binding material must be prevented by it. The possible poisoning of fishes in our rivers and streams is, however, a serious matter. It has been stated that where rain-water sweeping over a tar-painted surface has drained into a river the effect upon fishes has been fatal, and in one instance the poisoning of hundreds of trout has been reported. It is to be hoped that some steps will be taken to prevent this most undesirable destruction of fish life.

THE INTERNATIONAL HYGIENE EXHIBITION, DRESDEN.

IT will be remembered that a British Executive Committee was formed in May of this year for the purpose of organising the British participation in the International Hygiene Exhibition which is to be held in Dresden from May to October next year. At the inaugural meeting of this committee it was announced that negotiations were still proceeding with His Majesty's Government with regard to the invitation which had been issued by the German Government to participate officially in the exhibition. In the course of these negotiations the various departments from which assistance was desired were approached individually, certain Cabinet Ministers and other influential men being asked to obtain reconsideration of the refusal communicated in April of this year by our Foreign Office to the German Government. All efforts, however, of the British Executive Committee to obtain Government recognition and subsidy have failed. This is serious when it is remembered that every European Power of importance, as well as many extra-European Powers, including Japan, have accepted the invitation of the German Government and have voted sums of money to erect and equip national pavilions at Dresden. The question of money can hardly have influenced the Government, for we understand that some such sum as £10,000 would adequately meet the situation. We presume that this sum will be forthcoming through the private generosity of those more especially interested, but the feeling is strong upon us that in this instance the coöperation and support of Government would have been a statesmanlike move, as well as a proof of practical interest in science.

MEDITERRANEAN FEVER IN A VILLAGE NEAR LUCCA.

WE publish in this week's issue of THE LANCET an epitome of an outbreak of Mediterranean or Malta fever in an Italian village. The outbreak is in some respects unusual, and the account given of the clinical features of the disease is both lucid and interesting. The occurrence of mixed infection by both Malta and enteric fevers has been mentioned as a possibility before, but in the present series the coexistence of the two diseases was apparently established by recognised bacteriological methods in a few cases. It appears probable that the Malta fever infection was the primary one, and the clinical manifestations in these cases could be separated into two definite periods, the earlier one corresponding to Malta fever, the second to enteric fever. It is of interest that in one of these cases a pure culture of the Bacillus typhosus was isolated from blood removed by spleen puncture, but specific agglutination reactions were obtained with the organism of Malta fever, strongly suggesting a previous Malta fever infection, although the organism was not obtained and therefore the proof is not absolute. It is, however, in regard to the suggested origin

and spread of this Malta fever epidemic that the information given in the epitome is exiguous, and views are expressed that are at variance with those generally held in regard to the epidemiology of this disease. Recent work has demonstrated that the disease is not usually spread from person to person, or from the sick to the healthy, although that this is possible is not denied; but the importance of the milk of infected goats in the spread of the disease has been incontrovertibly established. In this Italian epidemic, however, the writers of the paper deny the possibility of goats being in any way concerned in its appearance and spread, and they assign a preponderating influence in these matters to direct and indirect contagion. It is known, however, that cows sometimes suffer from Malta fever, and that the Micrococcus melitensis has been found in their milk, and this means of infection does not appear to have been considered. It would also have been of interest to know whether there was any special incidence of the disease upon that third part of the population which went to work daily in Viareggio or upon any special group of workers. In view of the unusual occurrence of direct infection from person to person, it is difficult to attribute the spread to this cause until all other possibilities have been disproved.

CORONERS' LAW AMENDMENT AND THE LONDON COUNTY COUNCIL.

THE Public Control Committee of the London County Council reported recently that the recommendations of the Departmental Committee on Coroners' Law Amendment substantially embodied the proposals on this subject made by the Council. The only points of difference were three in number. The Departmental Committee proposed "that every coroner should be empowered to appoint a second deputy to act in case of emergency." The Council, however, proposed that the office of deputy coroner should be abolished as far as London was concerned. At present the law permitted a coroner to appoint a deputy. Although such an appointment was now subject to the approval of the chairman of the Council, the person selected was practically a private individual exercising an important official function. Any payment he received was made by the coroner, and it had happened that coroners had received large salaries, had left much of their work to deputies, and had paid them an almost nominal sum for doing it. In London, at any rate, deputy coroners would appear to be unnecessary under the revised organisation suggested by the Departmental Committee, as during the illness or absence of the coroner arrangements might be made such as now existed in the case of metropolitan police magistrates, whose duties did not confine them exclusively to any particular court or district. With regard to the recommendation that the view of the body by the jury should be dispensed with except in special cases in which the coroner thought it necessary, the Public Control Committee did not think the decision should rest solely with the coroner, but that the view of the body should be dispensed with except where the coroner and "a majority of the jury" thought it necessary. As to the recommendation "That Section 22 (2) of the Coroners Act, 1887, which provides that officers of medical institutions shall not be paid a fee for giving evidence or making post-mortem examinations, should be repealed," the Council on Nov. 5th, 1907, passed a resolution indicating that it was not in agreement with the payment of fees to officers of medical institutions. With the foregoing exceptions the committee thought the proposals of the Departmental Committee would result in valuable reforms of the existing law, and recommended that the Lord Chancellor and the Home Secretary be so informed and be asked to promote the necessary legislation. This was agreed to.

BABINSKI'S SIGN IN DIPHTHERIA.

AN interesting paper in the *Review of Neurology and Psychiatry* for July by Dr. J. D. Rolleston contains the results of a systematic investigation of the plantar reflex in cases of diphtheria. The occurrence of Babinski's sign in diphtheria was first recorded by Kiroff in 1905, and since that time Dr. Rolleston has drawn attention to its frequency in association with precocious paralysis of the palate and with hæmorrhagic diphtheria. He now records his observations on 877 cases of the disease in which he has examined the state of the plantar reflex. An extensor response of the great toe, with varying movements of the other toes, was found in 172 cases—that is, in 19·6 per cent.; in 29 flexion alternated with extension, and in 676 the normal flexor response was obtained. No case investigated had been treated with strychnine, which in large doses may lead to Babinski's sign. None of the cases giving this sign showed any other indication of involvement of the pyramidal system. This response was not seen with special frequency in rickety children or in those who had learnt to walk late. It was not confined to infants, and cannot therefore be explained as due to incomplete pyramidal development. After the eighth year it occurred less frequently and for shorter periods. It occurs in the acute stage and is replaced by flexion during convalescence. It is more frequently observed in the severe forms of diphtheria than in the mild ones, and its occurrence may have a certain prognostic value, although it is not of such grave omen as precocious paralysis of the palate. It is never accompanied by ankle clonus. It has no special diagnostic significance in diphtheria, since it occurs in association with other infections such as enteric fever, scarlet fever, and lobar pneumonia. It is, however, less common in non-diphtheritic sore-throats than in diphtheria. The explanation offered of its occurrence is that it is due to temporary and slight interference with the pyramidal tract by the toxins of the disease. These observations are of interest as demonstrating the effects of this disease upon central as well as peripheral nerve structures.

AN APPARATUS FOR SHOWING OPERATIONS TO MANY SPECTATORS.

IN THE LANCET of Oct. 31st, 1908, p. 1316, we published an annotation on an apparatus which Dr. C. H. Duncan of New York City had devised for providing a large number of visitors with a complete view of an operation. One of the main benefits of that apparatus was that the spectators of the operation were not in the operating theatre itself, but in a neighbouring room, and yet they were able to see clearly the operating table and what it had on it. The image could, if wished, be magnified, so that the spectators could have the benefit of an enlarged view of the operation. Dr. Duncan has since published in the *American Journal of Surgery* an account of some improvements which he has made in this apparatus. The success of this modification is great, and an onlooker, Dr. Marshall W. McDuffie, who was present at one of the operations (if we may use the word present when the spectator is not in the same room), has described the excellence of the appearance on the screen. "From the moment the anæsthesia was begun until the patient was ready to be removed to the ward, every movement of the surgeon and his assistant was plainly visible." He goes on to say that the incision was clearly seen, and then he continues: "We saw the smaller vessels as they spouted and were successfully ligated or brought under control, while the slight differences in the colour and texture of the

various tissues exposed were clearly appreciated. None of the phases of the operation, not even the least important, was missed." The advantages of the apparatus are as follows. It affords to a large audience a clear view of all the steps of an operation. The spectators are comfortably seated in an adjoining room where they may enjoy a well-ventilated atmosphere free from steam and the vapours of anæsthetics. They do not crowd upon the surgeons, distracting their attention and perhaps compromising the asepsis. Photographs can be readily taken from the picture on the screen, and Dr. Duncan has illustrated his paper with reproductions of some of these. We think the method is well worthy of a trial, for, in a modern operating theatre, if due precautions are taken to prevent the spectators interfering with the operation, they can see very little of what is going on.

THE LORRAINE CROSS.

A CORRESPONDENT points out that at the Edinburgh Conference on Tuberculosis what purported to be the Lorraine Cross was painted on the little rounds of cardboard worn by the members of the committee in their buttonhole, but the cross was incorrectly drawn, being portrayed thus—

instead of thus—

"In speaking of this to several persons," he writes, "I found that general ignorance prevailed on the subject. It was not understood that the Lorraine cross is the international symbol of the war against tuberculosis. No one committee, even no nation, has any right to alter this symbol any more than they would have the right to alter the shape or colour of the Geneva cross of the International Association for the Succour of the Sick and Wounded in War." The Lorraine cross and its meaning were much discussed at the International Congress on Tuberculosis held at Washington in 1908; and as at that time the rival claims to powers for mischief of the bovine and human bacilli were much discussed, it was facetiously suggested that the upper, shorter, and therefore proportionately thicker horizontal line represented the bacillus of bovine tuberculosis, and the lower, longer line the human bacillus. The fact that this cross, while it is more generally used in the Eastern than the Western Churches, is also associated with the old province of Lorraine, does not explain why it was adopted for the propaganda work in all nations that is directed against the spread of tuberculosis. At Washington the conclusion that found most favour was that this new international movement proposed to do in regard to tuberculosis what had already been done for the sick and wounded in war. Therefore they adopted first of all the Geneva cross, having four arms of equal length; then, to show that it was for tuberculosis and not for war, they put a big T under the Geneva cross, and thus, without any intention of so doing, adopted the Lorraine cross.

Mr. Philip Heywood Hadfield, L.R.C.P. & S. Edin., L.F.P.S. Glasg., has received His Majesty's Royal licence and authority to accept and wear the decoration of the Chevaliers of the Order of the Crown of Italy, which has been conferred upon him by His Majesty the King of Italy, in recognition of valuable services rendered on the occasion of the recent earthquake in Southern Italy.

THE King has been pleased, on the recommendation of the Secretary for Scotland, to approve the appointment of Dr. Hamilton Clelland Marr, as Medical Commissioner in Lunacy for Scotland, in place of Dr. John Fraser, who has retired on attaining the age limit.

BRITISH PHARMACEUTICAL CONFERENCE.

THE forty-seventh annual meeting of the British Pharmaceutical Conference was held at Cambridge this week under the presidency of Mr. Francis Ransom.

On Monday evening a reception was held in the dining hall at St. John's College by Professor J. Reynolds Green, F.R.S., on behalf of the local committee, and on Tuesday morning in the lecture theatre of the Botany School Dr. A. W. WARD (deputy Vice-Chancellor) and Alderman W. P. SPALDING (Mayor) delivered brief addresses of welcome.

Mr. RANSOM then delivered his Presidential address, which dealt mainly with some aspects of pharmaceutical research, and in the course of his speech he drew attention to certain directions in which progress may be anticipated. For instance, he suggested that the cause of the temporary variation in the quality of certain drugs afforded further scope for botanical investigation. For many years the jalap of commerce yielded from 10 to 20 per cent. of resin, but a few years ago there commenced a gradual decline in percentage until it was difficult to obtain tubers which would yield the 10 per cent. required by the British Pharmacopœia; at the present time, however, jalap containing 10 to 15 per cent. of resin is obtainable. A somewhat similar experience has occurred in connexion with belladonna root. Whether the variations are due solely to the seasons, or whether there are other conditions affecting the constituents of the drugs, is a subject inviting investigation. There are, however, other questions to be decided in the valuation of drugs besides the estimation of what are usually considered to be the active constituents. For instance, it is a question for the therapeutist to decide whether the physiological properties of belladonna and jalap are entirely due to the mydriatic alkaloids and resins which they respectively contain. In many kinds of research work more valuable results might be obtained if several classes of investigators were to work together. Thus in order to establish the value or worthlessness of any remedy, organised experimental investigation should be undertaken by the physiologist to determine its action, by the pharmacologist to confirm its remedial value, by the chemist to determine its composition, and by the pharmacist to devise suitable preparations. Among other matters referred to by Mr. Ransom was the question of the standardisation of disinfectants. He said the difficulties met with in the investigation appeared to be as great as, or even greater than, those encountered in the standardisation of drugs. In his view "a true disinfectant must not be simply a germicide, but also have the power of decomposing and rendering innocuous the poisonous substances produced by the micro-organisms of disease. The conditions in which the disinfectants are to be used have also to be considered, such as the temperature during the process of disinfection, the presence of foreign substances, and the variety of micro-organism which is the cause of the trouble. Neither the chemical nor bacteriological processes which have hitherto been devised seem to be applicable in all cases, although for specific purposes comparisons of efficiency may be deduced."

In all 20 scientific papers were communicated, many of which were naturally of pharmaceutical interest only.—A particularly useful paper (which incidentally shows that valuable results are to be obtained when pharmacists and pharmacologists work in collaboration) was that on Liquid Extract of Ergot. Mr. J. H. FRANKLIN shows that in the manufacture of this preparation it is better to use a percentage of alcohol in the menstruum instead of water only, and Dr. G. S. HAYNES demonstrates that the result of preparing an extract with a semi-alcoholic menstruum is to increase the physiological activity, as compared with the watery extract.—In a paper on Asafetida, Mr. J. C. UMNEY and Mr. S. W. BUNKER show that the oil of the tears differs materially from that of the mass. This suggests that systematic therapeutic experiments should be conducted with the oils, or for convenience, with standard tinctures prepared with 90 per cent. alcohol, and that upon the results of such therapeutic experiments should be based a revised monograph for asafetida for

the British Pharmacopœia.—In a paper on Cinnamon Bark Oil, Mr. UMNEY and Mr. C. T. BENNETT urge the importance of insisting that essential oils which are official in the British Pharmacopœia should answer *characters* as well as *tests*. There can be no two opinions about the beautiful aroma and sweet taste of cinnamon bark oil, and the very great advantage it possesses in flavour over cassia oil or artificial cinnamic aldehyde. If cinnamon oil is to be viewed as a flavour, to be judged by its sweetness and delicacy, it should be a light normal distillate, but if it is to be viewed as a remedial agent the authors think it preferable to have pure cinnamic aldehyde or 80 to 85 per cent. cassia oil.

A communication by Mr. A. W. KNAPP on the Effect of Age on Oil of Anise raises the important legal question: At what point in its gradual change from one mixture to another of different physical, chemical, and presumably different therapeutic properties does oil of anise cease to be of the "nature, substance, and quality demanded?" Mr. Knapp shows that with age the specific gravity of oil of anise increases, the optical rotation passes from left to right, and other changes take place.—In a note on the Filling of Hypodermic Ampoules Mr. T. STEPHENSON shows that conditions of sterility and permanence are fulfilled to perfection by the hypodermic ampoule. This is a sealed glass capsule, containing a measured dose of hypodermic solution thoroughly sterile; the capsule is of a suitable shape to allow of its being carried about in the pocket-case and to admit of the contents being abstracted with a minimum of trouble to the medical practitioner and the minimum of risk of contamination to the solution. Mr. Stephenson shows that the preparation of ampoules is a simple matter.—Mr. J. F. TOCHER in his paper describes a modification of Mendeleef's classification of the elements; the result of this is to place elements of like properties in similar positions, while elements with unlike properties are separated by distances proportional to the intensities of their differences.—Mr. P. E. F. PERREDES describes an insect which causes considerable damage to belladonna plants and suggests a method of eradication.—In a paper on the Interpretation of Water Analysis Reports Mr. J. E. PURVIS suggests a number of rules which are necessary before a final judgment can be passed upon any water, and that the final judgment with regard to the quality of a water should rest with the chemist and bacteriologist in collaboration; for a water which, from a chemical point of view, is organically pure, may contain the germs of disease; or, on the other hand, a water bacterially pure may chemically be dangerous or suspicious.

Professor REYNOLDS GREEN contributed an interesting note on the Old English Herbals in the Cambridge Botany Library.—Mr. H. J. HENDERSON, in a paper on the Proposed Essential Oil Monographs, gives the result of some investigations which the compilers of the Pharmacopœia will no doubt find useful.—Mr. T. E. WALLIS suggests an improvement on the official process for the determination of phosphoric acid.—In a paper on a Chemical Examination of the Rhizome of Cimicifuga Racemosa, Mr. H. FINNEMORE states that he found distinct reactions for alkaloids, but the amount present is very small.—Mr. E. QUANT suggests a new method of preparing chloroform of belladonna.—Mr. F. H. ALCOCK contributed a note on Turmeric, and Mr. G. C. DRUCE read two papers, one on a recently discovered MS. concerning John Ray, and another on Nature Reserves. In the latter paper Mr. Druce deals with a portion of fenland near Wood Walton which has been acquired by Mr. Charles Rothschild, and is to be preserved as one of nature's sanctuaries, in which animal, bird, insect, and plant life will remain secure.

Considerable interest was taken in the papers read upon the question of the standardisation of disinfectants. The subject was opened in a paper by Professor SIMS WOODHEAD and Dr. PONDER. Further papers were read by Mr. C. T. KINGZETT, F.I.C., F.C.S., by Mr. R. C. WOODCOCK, F.I.C., F.C.S., and by Dr. A. SOMERVILLE, and lastly, a critical note was given by Professor TANNER HEWLETT which had direct reference to the work of THE LANCET Commission upon this subject. A long discussion followed, in which Mr. PURVIS, Dr. RIDEAL, and others took part. As our columns are under considerable pressure this week with the proceedings of the British Medical Association, we must reserve for a future number both an abstract of the papers and of the discussion that followed their reading.

MEDICINE AND THE LAW.

The Attorney-General v. *Churchill's Veterinary Sanatorium, Limited, and James Churchill.*

THE above action recently tried by Mr. Justice Neville in the Chancery Division had as its result a judgment of considerable importance to veterinary surgeons, which, if the principles of law raised in it receive fuller discussion in the Court of Appeal, may be found to be not without direct interest to the medical profession. It will be observed that the Royal College of Veterinary Surgeons obtained the intervention of the Attorney-General, who appeared not as a prosecutor, but as a plaintiff in an action instituted in the Chancery Division. The statement of claim alleged that the defendant company "was formed for the purpose of wrongfully and fraudulently deceiving and injuring the public and the Members of the Royal College of Veterinary Surgeons and other persons registered under the Acts for the protection of veterinary surgeons, by holding out the said company as being conducted by persons specially qualified to practise veterinary surgery; that by reason of the premises the public were likely to be induced, and were induced, to believe that the said company or the persons who carried on the same were specially qualified to practise the said art, whereas in truth and in fact neither the said company, nor anyone in connexion therewith, was registered under the Acts for the protection of veterinary surgeons or qualified to practise the said art; and that the said company was formed for an unlawful purpose—namely, that of imposing upon the public and depriving persons duly registered under the Acts for the protection of veterinary surgeons of the fees and charges which they were entitled to charge under the Acts." The nature of the case is indicated by the above. It was alleged by the plaintiff that the defendant Churchill, a person without any qualification to practise veterinary surgery, having been stopped by the usual proceedings of prosecution and warning from holding himself out as a "bovine, feline, and canine surgeon and specialist" and as a "canine specialist, expert in all diseases of dogs," converted his business into a joint-stock company, relying upon the immunity from prosecution attributed in the circumstances to such a body. The share capital of this company was £500 in £1 shares, of which the defendant Churchill and other signatories of the articles of association held one each, 394 being allotted to the wife of Churchill. The plaintiff sought an injunction restraining the defendants from using names, titles, or descriptions implying that they were specially qualified to practise veterinary surgery or from holding out the company or those conducting it as being so qualified and from practising veterinary surgery for reward, on the ground that the scope and intention of the Veterinary Surgeons Acts was to distinguish between qualified and unqualified practitioners, and that if a company held itself out as carrying on the business of a veterinary surgeon that must mean it was acting by duly qualified agents. The fraud alleged consisted in representing what was contrary to the truth—namely, that at a given house veterinary attendance was given by duly qualified veterinary surgeons. Against this it was contended that there had been no taking of any title, addition, or description implying qualification to practise veterinary surgery, and no holding out that the company was conducted by persons qualified to practise veterinary surgery, or that fees had been received for such practice. The words "sanatorium" and "specialist" used to describe the company were, it was argued, not evidence of fraud, and cases decided under the Dentists Act were cited in support of the defendants' case. Mr. Justice Neville, in giving judgment, took the view that his decision must depend upon the description of the company given upon the front of the premises occupied by it. This had been proved to be "Churchill's Veterinary Sanatorium, Dogs and Cats boarded, James Churchill, M.D., U.S.A., Specialist," with additions alleged to have been made later to the earlier inscription (but this was denied by the defence) "advice gratis," and after the name Churchill the words "managing director." His lordship was of the opinion that this description constituted a representation that Churchill was a practitioner of a branch of veterinary surgery, and that for it both he and the company must be equally responsible. The learned judge consequently held that the plaintiffs were entitled to an injunction restraining

both the defendants from using any description of Churchill stating him to be a veterinary surgeon or a practitioner of veterinary surgery or of any branch thereof, and in that form he granted the injunction with costs against the defendants, but allowed a stay of execution subject to notice of appeal being given within seven days.

EPIDEMIC OF MEDITERRANEAN FEVER IN A VILLAGE NEAR LUCCA.

THE following is an epitome of a study of an outbreak of Mediterranean fever at Stiava, Lucca, Italy, recorded by F. Neri, V. Antico, and S. Spigai in the *Annali delle Università Toscane*.[1] The unusual features of the outbreak are commented upon in an annotation on p. 326 of this issue.

From June to November, 1908, a serious epidemic of Mediterranean fever occurred at Stiava, a large village situated at the foot of a valley, outspread with a western aspect and backed by hills which rise about six kilometres east of Viareggio. The land about Stiava is used for high farming and lower down the slope for the old-type rice fields. There are about 1700 inhabitants; two-thirds are agricultural and one-third are workpeople who go daily to Viareggio, and amongst the latter there is some temporary emigration to Tunis and Algiers during the autumn. In Stiava, well-supplied as it is with running water, laundry work is carried on, nearly the whole of the linen from Viareggio being washed here.

There had been a suspicion that at Stiava, as in every other part of the Mediterranean basin, Malta fever might be present as an endemic, but previous to this outbreak it had not appeared as an epidemic either at Stiava or in any other district in Central or Southern Italy. In 1908 260 people were attacked; a number representing no less than 15 per cent. of the whole population. This epidemic presented a period of growth (June and July with 18·5 per cent. of the cases), a period of maturity (from August to October with 71 per cent. of the cases), and a period of decline (October and November with 10·5 per cent. of the cases). The length of the outbreak, especially in its middle period; the spread of the disease by locality and contact; the grouping of the larger number of the cases in foci corresponding to the more closely packed houses; the growth and decline of the epidemic with the summer and autumn,—all these points lead to an initial exclusion of water-borne infection whilst pointing to direct and indirect contagion. The disease was most frequent among the young folk; in fact, 63·5 per cent. of the cases were under 20 years of age, whilst between 20 and 40 years there were 9·5 per cent. of cases. Of the whole number attacked 55 5 per cent. were females. In 1909 the after-effect of the previous year's outbreak was observable in a total of 66 sporadic cases, for the most part during the summer and the autumn, although there was no real epidemic recurrence. No life was lost as a direct result of Malta fever.

The recognition of the disease was rendered difficult by the variety of the clinical symptoms and by the appearance of a few cases of typhoid fever scattered about the district. The specific malady described by Bruce was at first only suspected, but was definitely diagnosed through the results of a number of agglutination tests carried out with serum from patients who were passing through the disease, or were convalescent. Further confirmation was obtained by the isolation of the specific micrococcus after spleen puncture. 119 cases were submitted to the agglutination test, the greater part of these cases being convalescent or recovered. The results of the serum tests (with a dilution of not less than 1 in 100) were as follows:—

	Number of cases.	Percentage.
Micrococcus melitensis alone	77	64·7
Micrococcus melitensis together with typhoid bacillus	38	32·0
Typhoid bacillus alone	4	3·3

The results of the agglutination tests obtained simultaneously both for the micrococcus melitensis and the typhoid bacillus in so considerable a number of cases led to some research with the object of eliminating any doubt as to the specific nature of the phenomenon. This specific nature was, however, definitely settled both by agglutination tests in combination with tests for specific absorption, and also by the positive agglutination of the high-value serums obtained from rabbits treated with cultures of each organism. Admitting, then, the specific nature of the agglutination for those serums simultaneously active for the two germs, the presence of the two infections together must be admitted for the corresponding patients, and the determination of the later infection must be decided by the clinical symptoms. On this basis 109 cases of Mediterranean fever and 10 cases of typhoid fever were diagnosed by means of the 119 agglutination tests.

Three of the typhoid cases are of peculiar interest, since, bearing in mind the double agglutination of their serums for the organisms of typhoid fever as well as of Malta fever, these three offer themselves with extreme probability as mixed Bruce-Eberth cases, both from the clinical course of the illness and from the history of contact with Malta fever cases during the outbreak in question. In these particular cases two clinical periods were distinguishable: the first period referable to Mediterranean fever and the second to typhoid fever. The fact of having isolated the bacillus of Eberth in a pure culture by spleen puncture from one of these patients during the later stage of the second (or typhoid) period does not seem a sufficient reason for excluding the Brucian nature of the first period. Rather it seems probable that the Bruce microbe, in vital competition with the Eberth microbe, might have been overborne and have disappeared from the spleen, whilst the agglutinins remained to bear witness to the earlier presence of the infection of Malta fever.

The epidemic outbreak presented all the various and never well-defined clinical forms of Brucian infection. In most of the cases there were sudaminal rashes; in others pseudo-papular, and in one a scarlatiniform eruption. There were many painful forms of ischialgia, gastralgia, neuralgia, and myalgia; in several there were well-marked joint affections, in one hæmoptysis and violent metrorrhagia, and in another orchitis and epididymitis; there were also cases of vaginitis. The temperature curve, varying much amongst individuals, travelled an intermittent course in most of the cases; in others it was markedly remittent; whilst in some it was now intermittent, now remittent, or continuous. Eight temperature charts are given as examples.

A division may be made into clinical categories: (1) acute cases with high temperature, running from two to four weeks—about 70 cases; (2) cases of medium severity running for a month and over—about 160 cases; and (3) prolonged cases and those of an ambulatory type—about 40 cases. The more important cases of each class are given, and emphasis is put on the polymorphism and variety presented in the picture, rendering impossible any definite description which might be applicable to the whole.

Regarding the route by which Malta fever reached Stiava much stress must be laid on the intimate connexions between this place and Viareggio, which town has in its turn frequent relations with the ports of the lower Mediterranean basin, all infected with Bruce's fever. As to the way by which the infection spread during the period under discussion, any part played by the goat may be excluded, since goats are few and not used for milk; rather must a preponderating importance be assigned to direct and indirect contagion.

The prophylactic measures suggested are local concentration of the sanitary service, regulation of the laundry business, and extension of the potable water system with a view to checking the use of the readily polluted surface water.

[1] Vol. xxix., 1910, Pisa.

LITERARY INTELLIGENCE. — Messrs. W. B. Saunders Company have in the press "A Handbook of Practical Treatment," in three volumes, by 77 contributors, edited by Professor John H. Musser, of Pennsylvania, and Professor A. O. J. Kelly. The aim of this work is to be practical. Each chapter is a monograph by a special authority.—Messrs. Rebman, Limited, will issue a new book by Dr. D. Berry Hart, entitled "Some Phases of Evolution and Heredity," in which Darwinism, Wiesmannism, and Mendelism are critically considered in modern lights.

METROPOLITAN HOSPITAL SUNDAY FUND.

UP to Thursday morning, July 28th, about £63,000, which includes £24,584 from the executors of the late Mr. George Herring, had been received at the Mansion House. Among the additional church collections are:—

	£	s.	d.
St. Mary Abbot's, Kensington (St. Mary Abbot's, £348; St. Paul's, Vicarage Gate, £89; Christ Church, Victoria-road, £57)	494	0	0
Holy Trinity, Sloane-street	465	0	0
West London Synagogue	324	0	0
St. Paul's, Knightsbridge	272	0	0
Great Synagogue	239	0	0
St. Mary's, Bryanston-square	193	0	0
All Saints, Emlsmore-gardens	185	0	0
Hampstead Synagogue	146	0	0
New West End Synagogue	130	0	0
St. Stephen's, Westbourne Park	120	0	0
Central Synagogue	120	0	0
St. Bartholomew's, Sydenham	106	0	0
Bayswater Synagogue	102	0	0
St. John's Wood Synagogue	77	0	0
St. John's Wood Presbyterian Church	69	0	0
Victoria Park Christian Evidence Association	60	0	0
Holy Trinity, Wandsworth	60	0	0
Barking Parish Church and Missions	55	0	0
"F."	50	0	0
Trinity Church, Hampstead	47	0	0
St. Saviour's, Brixton-hill	41	0	0
St. Peter's, Streatham	38	0	0
St. James's, Holloway	36	0	0
Wilmington Parish Church	33	0	0
St. John's, Hillingdon, with Evelyn's School Chapel	32	0	0
St. Saviour's, Paddington	31	0	0
Stoke Newington Synagogue	31	0	0
St. Andrew's by the Wardrobe	29	0	0
South Hackney Synagogue and Religion Classes	28	0	0
Epping Parish Church and All Saints'	28	0	0

AT a meeting of the Council of the Metropolitan Hospital Sunday Fund, held at the Mansion House on July 27th, under the presidency of the Lord Mayor, it was announced that the total sum available for distribution for the present year is £63,000. This sum will be distributed between 166 hospitals and institutions, 59 dispensaries, and 30 nursing associations.

UNIVERSITY OF OXFORD.—*Radcliffe Travelling Fellowship, 1911:* An examination for a Fellowship of the annual value of £200, and tenable for three years, will be held in Hilary term, 1911. Candidates should make application to "The Radcliffe Examiners, Radcliffe Library, University Museum," from whom all particulars can be obtained. —*Radcliffe Prize, 1910–11:* The next award for the Radcliffe prize will be in the year 1911. The prize, which is of the value of £50, is awarded by the Master and Fellows of University College every second year for research in any branch of medical science comprised under the following heads: Human anatomy, physiology, pharmacology, pathology, medicine, surgery, obstetrics, gynæcology, forensic medicine, hygiene. The prize is open to all graduates of the University who shall have proceeded or shall be proceeding to a medical degree in the University. Candidates must not have exceeded 12 years from the date of passing the last examination for the degree of B.A., and must not, at the date of application, be Fellows on the foundation of Dr. John Radcliffe. Candidates must send in their memoirs to the University Registry on or before the first day of December, 1910. The award will be made in March, 1911. No memoir for which any university prize has already been awarded is admitted to competition for the Radcliffe prize; and the prize will not be awarded more than once to the same candidate.—*Rolleston Memorial Prize, 1912:* This prize, which is of the value of about £60, will be awarded in Easter or Trinity term, 1912. The prize is open to such members of the Universities of Oxford and Cambridge as will not have exceeded 10 years from the date of their matriculation on March 31st, 1912, and is to be awarded for original research in any subject comprised under the following heads: Animal and vegetable morphology, physiology and pathology, and anthropology, to be selected by the candidates themselves. Candidates wishing to compete are requested to forward their memoirs to the Registrar of the University of Oxford before March 31st, 1912. The memoirs should be inscribed "Rolleston Memorial Essay" and should each bear the name and address of the author. They may be printed or in manuscript, memoirs already published being admitted to the competition.

Looking Back.

FROM

THE LANCET, *SATURDAY*, July 28th, 1832

THE EXPERIMENTS OF FARADAY, NOBILI, AND ANTINORI, ON A NEW CLASS OF ELECTRO-DYNAMIC PHENOMENA.

THE late discoveries of our distinguished countryman Dr. Faraday in this important branch of physics, has excited the attention of natural philosophers in every part of Europe, and his experiments have been successfully repeated and modified by many of his contemporary savans. Amongst other exotic inquirers, Signori Nobili and Antinori of Florence, who derived their first knowledge of Dr. Faraday's pursuits from a short notice given by M. Hachette to the Academy of Sciences at Paris, and afterwards published in "Le Temps" journal, are the most distinguished. The researches of Nobili and Antinori were published in the Antologia, No. 131, and were translated into the Philosophical Magazine of June last. This paper has been extracted by Dr. Faraday, and printed, with annotations, for private circulation, but as the reputation of this justly eminent chemist is now a sort of national property, we shall make no apology for devoting a portion of our pages in justification of his claims to these important discoveries. It has been said, and the assertion has been industriously spread by certain *liberal* and *candid* persons, that the two Italian physicians were the originators of the inquiry, but we are happy to observe, that those gentlemen do justice to the merit of our countryman, and frankly declare, that their "particular opinions do not in any way diminish the intrinsic merit of Mr. Faraday's discovery. It is one of the most beautiful of our time, whether it be considered in itself for the largeness of the vacancy it serves to fill, or for the light it throws over the various theories, and especially that of the magnetism of rotation." The following is the notice which appeared in "Le Temps," and which being translated into several languages, has served as the text of all subsequent papers on magnetic electricity.

"The memoir of Mr. Faraday is divided into four parts. In the first, entitled Induction of Voltaic Electricity, is found the following important fact, that a voltaic current which traverses a metallic wire, produces another current in a neighbouring wire; that the second current is in a direction contrary to the first, and continues but for a moment; that if the producing current is removed, a second current is manifested in the wire submitted to its action, contrary to that which was first formed in it, i. e. in the same direction as the producing current.

"The second part of the memoir treats of electric currents produced by the magnets. On causing helices to approach to magnets, Mr. Faraday has produced electric currents; on removing the spirals, currents in the contrary direction were formed. These currents act powerfully on the galvanometer; pass, though feebly, through brine and other solutions, and in a particular case, Mr. Faraday *has obtained a spark*. Hence it follows, that this philosopher has, by using a magnet only, produced the electric currents contemplated by M. Ampere.

"The third part of the memoir is relative to a particular electric state, which Mr. Faraday calls *electro*-tonic *state*." (Vide LANCET, Nos. 456, 457, 458.)

"The fourth part speaks of the experiment, not less curious than extraordinary, of M. Arago, which consists, as is known, in making a magnetic needle revolve under the influence of a rotatory metallic disc, and *vice versa*. Mr. Faraday considers this phenomenon as intimately connected with that of the magnetic rotation, which he had the good fortune to discover about ten years ago. He has ascertained, that by the rotation of the metallic disc under the influence of a magnet, there may be formed electric currents in the direction of the rays of the disc, in sufficient number to render the disc a new electrical machine."[1]

[1] Excerpt only. We have not the space to spare to transcribe the remaining eight columns of this interesting chapter in the early history of the dynamo.

Public Health.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

Annual Report on the Health of the City of Edinburgh.

Dr. A. M. Williamson, the medical officer of health of the city of Edinburgh, has issued a satisfactory annual report. The estimated population of the city was 355,621, giving an increase of 4860 from last year. The natural increase—that is, the excess of births over deaths—was 2081. The area of the city is 11,416 acres, and the density of the population is 31·1 persons per acre over the total area. There were 71,340 inhabited and 4879 uninhabited houses. 7187 births were registered, giving a birth-rate of 20·20. There were 2795 marriages and 5106 deaths, giving a death-rate of 13·45 per 1000, as compared with 13·37 in 1908. The infantile mortality was 841 deaths under one year, or 113 per 1000 births. The death-rate for the seven principal zymotic diseases was 0·92 per 1000, while the death-rate from phthisis was 1·2 per 1000. The death-rate in 1861 was 23·15 per 1000; in 1871 it was 27·86; in 1881 it was 18·86; in 1891 it was 20·12; in 1901 it was 17·76. Thus the death-rate in 1909 was less than half what it was in 1871. Of the births there were 104·8 boys to every 100 girls, and the percentage of illegitimate to total births was 7·10. The birth-rate was lower by 1·55 than the average rate for the preceding five years, and lower by 5·53 than the rate for Scotland for last year, which was also the lowest on record. Comparing the birth-rate of Edinburgh with that of other large towns, it would appear that with the exception of Bradford, with a birth-rate of 18·8 per 1000, it stood at the bottom of the list. Liverpool, with a birth-rate of 31·1 per 1000, headed the list. The decline in the birth-rate is gaining prominence in the statistics of the whole country and assuming a national rather than a merely local significance.

Instructions were issued some time ago by the Local Government Board in accordance with which local authorities have transferred the deaths of non-residents to the districts in which their deaths ought to be counted. Of the total deaths occurring and registered in Edinburgh the rate was 15·3 per 1000, deducting the deaths of non-residents it was 13·45 per 1000, while adding the deaths transferred from other districts it was 14·35 per 1000. The Registrar-General used the first-named rate. Thus Edinburgh, instead of standing lowest among the large towns of the kingdom, has Leeds and Aberdeen below it. The highest mortality of the year was in the last week of February, and the next highest in the first week of December. The highest mortality from respiratory diseases was in the first week of December. Diseases of the circulatory system gave the largest number of deaths—viz., 1065—while respiratory diseases stood next with 892 deaths. There were 130 deaths by violence, of which 28 (18 men and 10 women) were suicides. Four of these occurred at the Dean Bridge, which remains a blot on the reputation of Edinburgh. Means ought to have been taken long ago to make these suicides impossible. As things exist at present they rather invite and encourage suicide. Deaths resulting from suffocation (or overlying), which averaged 24 over the five previous years, were reduced to 8 last year, for which, it seems to us, the health visitors deserve to be commended. Lectures for the benefit of mothers have been given during the year, as have been courses of lectures for the health visitors. Systematic visiting of babies, and provision of clothing in necessitous cases, have been carried out. Pasteurised milk, in sealed bottles, each containing a single meal, procured from tuberculin-tested cows, were supplied daily at "The Hospice."

With regard to infectious diseases, the total number of notifications was 2988, of which 774 were phthisis, and 28 cerebro-spinal fever. There was a very considerable decrease in the number of scarlet fever cases, as was forecast in the report for 1908. The zymotic mortality was, as has just been observed, 0·92 per 1000 of the estimated population. Of the 2244 cases, other than phthisis, notified during the year 1994 were removed to the City Hospital for treatment, a percentage of 89, as against 88 in 1908. Hospital treatment was being taken advantage of in an ever-increasing degree. There were notified during 1909, 774 fresh cases of phthisis. All of these were visited, and measures were taken to restrict the zone of infection. Complete disinfection was carried out wherever a patient had died or changed place of residence; 563 houses, involving 859 apartments, were so dealt with last year. 428 deaths from phthisis occurred during the past year, equivalent to a rate of 1·2 per 1000. The Registrar-General gives the following figures, which are interesting as comparing the death-rate from phthisis in Edinburgh with that in other towns:—

Dundee ...	168 per 100,000 living.		Greenock ...	111 per 100,000 living.		
Glasgow ...	136	,, ,,	Leith	107	,, ,,	
Paisley ...	133	,, ,,	Edinburgh	106*	,, ,,	
Perth... ...	133	,, ,,	Aberdeen ...	99	,, ,,	

* After correcting country deaths the rate becomes 120 per 100,000.

Two cases of small-pox occurred during the year, both imported. 39 cases of enteric fever were notified, 35 were removed to hospital, and 4 were nursed at home. Among the former only 2 deaths occurred, while among the home-treated cases there were 3 deaths. The notifications of diphtheria numbered 423, being in excess of the previous year, when the lowest record—namely, 389—was reached, but still presenting a favourable contrast with the average over the preceding five years of 623. 371 cases were removed to hospital. The death-rate was 8·9 per cent. of the total cases, the proportion of recoveries being markedly in favour of the hospital-treated patients—8·6 for hospital, 12 per cent. for home. About 10 per cent. of the whole were followed by various forms of paralysis. The soft palate was most frequently affected. As regards serum treatment, the figures, as usual, bear out the importance of early injection. Of the cases injected within three days of the onset of the disease, only 6·29 per cent. succumbed. Of those who came under treatment from the fourth to the sixth days inclusive, twice as many, or 12·69 per cent., died; and the death-rate of those admitted on the seventh day or after rose to 13·9 per cent. In 81 cases the injections were the cause of rashes or other sequelæ. 1552 cases of scarlet fever were notified, and 1142 were treated in hospital. The case-mortality was 3·2 per cent. 207 cases of erysipelas were notified, and there were 10 deaths, the lowest since the disease became notifiable. 28 cases of cerebro-spinal fever were notified, and there were 16 deaths. The disease appears to be dying out in Edinburgh. The high death-rate was attributed to the fact that only a proportion of the patients could be treated with Flexner's serum, the supply on more than one occasion running short. Of the cases treated with it only 33 per cent. died, and 2 out of the 15 patients so treated died within 24 hours of admission—that is to say, before the serum could be expected to act. 273 cases of German measles (rubella) were treated in hospital and all recovered. During the year 1013 cases were sent into hospital as measles; of these, 671 suffered from true measles, 273 from rubella (German measles), while the remaining 69 were examples of other conditions. 4·47 per cent. of the true measles patients died. The death-rate from whooping-cough in Edinburgh was 51 per 100,000, while in Scotland as a whole it was 54. Thus the disease maintains its position as the most fatal in the zymotic group. 38 cases of chicken-pox and 114 cases of mumps wer sent into hospital. All recovered. The removal of fever patients to hospital and of their clothing and bedding to and from the disinfecting station had hitherto been contracted for, but last year the public health department took over the work, which will now be carried on without outside assistance. This means a considerable saving. For tubercle, enteric fever, and diphtheria 1828 bacteriological examinations were made at the Usher Institute of Public Health.

The medical superintendent of the City Hospital (Dr. Claude B. Ker) supplies a very interesting report of the year's work there. He shows that the total cost of occupied beds per annum was £52 14*s.* 7*d.*, of which £18 12*s.* 5*d.* was cost of food and £34 2*s.* 2*d.* was cost of maintenance. The total cost of stimulants for the year was £63 10*s.* 6*d.*, as against £37 8*s.* 11*d.* in 1908. Of this £22 19*s.* 5*d.* was used in the diphtheria wards. The cost of serums during the year amounted to £334 17*s.* 6*d.* No less than 3030 laboratory examinations were made by the medical staff of the hospital during the year. Dr. Ker also contributes a report on cross infection (so-called). No less than 52 cases were admitted to hospital during 1909 with two diseases actually concurrent, and of these 20 were scarlet fever and diphtheria. 11 cases

were admitted incubating a second infection contracted outside the hospital. 36 patients contracted a second infection in hospital. During the year 3796 patients were admitted.

The second part of Dr. Williamson's report relates to the administrative work of the year regarding meat inspection, the inspection of cow byres, dairies, ice-cream shops, workshops, bakehouses, and hair-dressing saloons, as also the administration of the Shop Hours, Seats for Shop Assistants, and Sale of Food and Drugs Acts. The report extends to 123 folio pages, and is full of interesting matter relating to the public health of the city of Edinburgh. It is an able and valuable production on which we warmly congratulate the author.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In 77 of the largest English towns 8164 births and 3650 deaths were registered during the week ending July 23rd. The annual rate of mortality in these towns, which had been equal to 11·0 and 11·4 per 1000 in the two preceding weeks, declined again to 11·1 in the week under notice. During the first three weeks of the current quarter the annual death-rate in these towns averaged only 11·2 per 1000, and in London during the same period the death-rate, calculated on the estimated population, did not exceed 10·7 per 1000. The lowest reported annual rates of mortality during last week in these 77 towns were 2·8 in Burton-on-Trent, 4·8 in Walthamstow, 5·5 in Tottenham, and 5·9 in Leyton and in York; the rates in the rest of the 77 towns ranged upwards to 15·9 in Wigan, 17·7 in Liverpool, 20·5 in Barrow-in-Furness, and 22·3 in Stockton-on-Tees. In London the reported death-rate last week did not exceed 10·3 per 1000. The 3620 deaths registered last week in the 77 towns showed a decline of 72 from the low number in the previous week, but included 360 which were referred to the principal epidemic diseases, against 358 and 324 in the two preceding weeks; of these 360 deaths, 105 resulted from whooping-cough, 104 from diarrhœa, 97 from measles, 24 from diphtheria, 19 from scarlet fever, and 11 from enteric fever, but not one from small-pox. The mean annual rate of mortality from these epidemic diseases in the 77 towns last week was equal to 1·1 per 1000, against 1·1 and 1·0 in the two preceding weeks. No death from any of these epidemic diseases was registered last week in Walthamstow, Brighton, Southampton, Norwich, or in 8 other smaller towns; the annual death-rates therefrom ranged upwards, however, to 2·3 in Rhondda, 2·5 in Manchester and in Barrow-in-Furness, 2·6 in Salford, and 4·0 in Oldham. The fatal cases of whooping-cough in the 77 towns, which had declined in the four preceding weeks from 134 to 88, rose again last week to 105, and caused the highest annual rates, 1·4 in Halifax, 1·7 in Birkenhead and in Salford, and 1·8 in Oldham and in Tynemouth. The deaths attributed to diarrhœa also rose last week to 104, from 53, 71, and 68 in the three preceding weeks; the deaths from this cause were proportionally most numerous in Rhondda and in Wigan. The 97 fatal cases of measles were fewer than in any of the three previous weeks, but caused rates equal to 1·4 in Oldham and 2·5 in Barrow-in-Furness. The 24 deaths from diphtheria showed a further decline from recent weekly numbers, and included 8 in London, 3 in Liverpool, and 3 in Manchester and Salford. The 19 fatal cases of scarlet fever were fewer than in any previous week of this year; 6 occurred in London and its suburban districts, 2 in Walsall and 2 in Manchester. The 11 deaths referred to enteric fever showed a decline of 3 from the number in the previous week. The number of scarlet fever patients under treatment in the Metropolitan Asylums and in the London Fever Hospital, which had increased in the four preceding weeks from 1353 to 1530, had declined to 1548 on Saturday last; 173 new cases of this disease were admitted to these hospitals during last week, against 188 and 249 in the two preceding weeks. The Metropolitan Asylums still contained 3 small-pox patients on Saturday last. The 962 deaths registered in London during last week included 131 which were referred to pneumonia and other diseases of the respiratory system, corresponding with the number in the previous week, but exceeding by 6 the corrected average number in the corresponding week of the five years 1905–09. The causes of 24, or 0·7 per cent., of the deaths registered during the week were not certified either by a registered medical practitioner or by a coroner. All the causes of death registered during the week were duly certified in Leeds, Bristol, Bradford, Hull, Nottingham, Stoke-on-Trent, and in 54 other smaller towns; the 24 uncertified causes of death in the 77 towns last week included 3 in Liverpool and in St. Helens, and 2 each in Bootle, Manchester, and in Barrow-in-Furness.

HEALTH OF SCOTCH TOWNS.

In eight of the principal Scotch towns 884 births and 434 deaths were registered during the week ending July 23rd. The annual rate of mortality in these towns, which had been equal to 12·1 and 12·4 per 1000 in the two preceding weeks, declined to 12·0 in the week under notice. During the first three weeks of the current quarter the death-rate in these towns averaged 12·2 per 1000, and exceeded by 1·0 the mean rate during the same period in the 77 largest English towns. The annual death-rates last week in these eight Scotch towns ranged from 7·8 and 9·6 in Greenock and Leith to 12·8 in Paisley and 19·6 in Perth. The 434 deaths from all causes in the eight towns during last week showed a decline of 15 from the number in the previous week, but included 58 which were referred to the principal epidemic diseases, against 61, 48, 44, and 33 in the four preceding weeks; of these 58 deaths, 21 resulted from diarrhœa, 12 from whooping-cough, 8 from diphtheria, 6 from scarlet fever, 6 from "fever," and 5 from measles, but not one from small-pox. The mean annual rate of mortality from these epidemic diseases in the eight towns last week was equal to 1·6 per 1000, against 1·1 from the same diseases in the 77 English towns; the highest rate from these diseases in the Scotch towns last week were 1·5 in Dundee and 2·1 in Glasgow. The 21 deaths attributed to diarrhœa in the eight towns last week showed an increase of 8 upon the number in the previous week, and included 13 in Glasgow and 2 each in Edinburgh, Dundee, and Aberdeen. The fatal cases of whooping-cough, which had been but 2 and 3 in the two preceding weeks, rose to 12 last week, of which 10 occurred in Glasgow. The deaths referred to diphtheria, which had been 9 and 5 in the two previous weeks, rose again to 8 last week, of which 4 were returned in Glasgow and 2 in Aberdeen. The 6 fatal cases of scarlet fever, of which 3 occurred in Glasgow and 2 in Edinburgh, corresponded with the number in the previous week. Of the 6 deaths referred to "fever," showing a marked increase upon the numbers in recent weeks, 5 were certified as enteric and 1 as cerebro-spinal meningitis; 4 were returned in Glasgow. Of the 5 fatal cases of measles, 2 occurred both in Glasgow and in Dundee. The deaths referred to diseases of the respiratory system in the eight towns, which had been 66 and 49 in the two preceding weeks, were 50 last week, and exceeded by 1 the number in the corresponding week of last year. The causes of 17, or 3 9 per cent., of the deaths in the eight towns last week were not certified or not stated; in the 77 English towns the proportion of uncertified causes of death last week did not exceed 0·7 per cent.

HEALTH OF IRISH TOWNS.

In 22 town districts of Ireland, having an estimated population of 1,151,790 persons, 615 births and 359 deaths were registered during the week ending July 23rd. The mean annual rate of mortality in these towns, which had been equal to 17·0 and 15·7 per 1000 in the two preceding weeks, rose again to 16·3 in the week under notice. During the first three weeks of the current quarter the annual death-rate in these Irish towns averaged 16·3 per 1000, whereas the mean rate during the same period did not exceed 11·2 in the 77 largest English towns and 12·2 in the eight principal Scotch towns. The annual death-rate during last week was equal to 17·2 in Dublin, 15·6 in Belfast, 19·9 in Cork, 8·4 in Londonderry, 13·7 in Limerick, and 19·5 in Waterford; the mean annual death-rate last week in the 16 smallest of these Irish towns was equal to 16·4 per 1000, against 14·2 in the previous week. The 359 deaths from all causes in the 22 town districts last week showed an increase of 12 upon the

number in the previous week, and included 48 which were referred to the principal epidemic diseases, against 46 and 36 in the two previous weeks; these 48 deaths were equal to an annual rate of 2·2 per 1000; in the 77 English towns the mean rate last week from the same diseases did not exceed 1·1, and in the eight Scotch towns it was equal to 1·6 per 1000. The 48 deaths from these epidemic diseases in the Irish towns last week included 23 from measles, 12 from diarrhœa, 5 from enteric fever, 3 from scarlet fever, 3 from diphtheria, and 2 from whooping-cough, but not one from small-pox. The 23 fatal cases of measles (against 26 and 21 in the two previous weeks) included 21 in Belfast. The 12 deaths attributed to diarrhœa showed an increase of 7 upon the number in the previous week; 5 occurred both in Dublin and in Belfast. The 5 fatal cases of enteric fever also exceeded the numbers in recent weeks; they included 2 in Dublin. The 3 deaths from scarlet fever were returned in Dublin, and 2 of the 3 fatal cases of diphtheria occurred in Cork. The deaths in the 22 towns included 48 which were referred to pneumonia and other diseases of the respiratory system, against 61 and 68 in the two preceding weeks. The causes of 14, or 3·9 per cent., of the deaths registered in the Irish towns last week were not certified; in the 77 English towns the proportion of uncertified causes of death last week did not exceed 0·7 per cent., while in the eight principal Scotch towns it was also equal to 3·9 per cent.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

IN accordance with the provisions of Order in Council of April 1st, 1881, Staff-Surgeon Norman Howard Mummery has been allowed to withdraw from His Majesty's Naval Service with a gratuity (dated July 20th, 1910).

In accordance with the provisions of Order in Council of April 1st, 1881, Fleet-Surgeon Alfred John Pickthorn has been placed on the Retired List at his own request (dated July 25th, 1910).

The following appointments are notified:—Fleet-Surgeons: J. Mowat to the *President*, additional, for temporary service at Royal Victoria Yard, Deptford; R. D. Jameson to the *Cornwallis*, on recommissioning; E. H. Meaden to the *Hecla*; and C. S. Facey to the *Vengeance*, temporary. Staff-Surgeon: J. R. Muir to the *Swiftsure*. Surgeons: J. Hadwen to the *Cornwallis*, on recommissioning; R. Connell to the *President*, additional, for the *Maine*.

ROYAL ARMY MEDICAL CORPS.

Lieutenant-Colonel Benjamin T. McCreery, Half-pay List, retires on retired pay (dated July 23rd, 1910).

Colonel W. G. A. Bedford, C.M.G., Principal Medical Officer of Hong-Kong, has arrived home on leave. Lieutenant-Colonel H. M. Thompson has been appointed to officiate as Principal Medical Officer of the Eighth (Lucknow) Division, pending the arrival of Surgeon-General J. G. MacNeece from England. Lieutenant-Colonel D. M. Saunders has been transferred for duty from Dublin to Cork. Lieutenant-Colonel R. H. Hall, on completion of temporary duty in medical charge at Mill Hill, has returned to Colchester. Lieutenant-Colonel M. O'D. Braddell has been appointed to command the Station Hospital at Rawal Pindi. Major C. R. Elliott, sanitary officer of the Third (Lahore) Division, has been transferred from Lahore to Dalhousie. Major H. B. G. Walton, from Pontefract, has taken up duty at York. Major S. H. Withers, from Ambala, has been appointed to command the Station Hospital at Gharial. Major C. J. O'Gorman, D.S.O., from Nowshera, has joined at Peshawar. Major E. W. P. V. Marriott has arrived home on leave from Gibraltar. Captain F. S. Walker, from Cahir, has been posted to the Military Hospital at Fermoy. Captain E. J. Kavanagh, from Bareilly, has been transferred to Ranikhet. Captain H. C. Winkworth, from Limerick, has taken up duty at Queenstown. Captain E. C. Whitehead, from Cork, has been appointed for duty at Ballincollig. Captain N. E. Dunkerton has been posted to Woolwich. Captain S. G. Butler and Captain V. H. Symons have arrived home on leave from South Africa. The following officers, who have completed their course of instruction for promotion to rank of Major at the Royal Army Medical College, Grosvenor-road, have been ordered to join the Irish Command at the end of this month and on arrival will be posted as follows: Captain A. McMunn, Captain W. D. C. Kelly, Captain A. T. Frost, Captain W. F. Tyndale, C.M.G., and Captain J. M. Conway to the Dublin district; Captain R. J. Franklin, Captain D. Ahern, Captain C. R. Millar, Captain P. Power, Captain J. H. Duguid, and Captain T. S. Coates to the Cork district; Captain D. L. Harding and Captain F. W. W. Dawson to the Belfast district. Lieutenant R. M. Dickson on arrival in India from Glasgow has been posted to Lucknow to undergo a course of Indian sanitation. Lieutenant J. C. L. Hingston, from Cosham, has been appointed to Hilsea. Lieutenant F. Worthington has been transferred from Buttevant to Queenstown. Lieutenant T. W. Stallybrass and Lieutenant V. P. Hutchinson have been stationed at the Royal Victoria Hospital, Netley.

The undermentioned Lieutenants are confirmed in that rank: William H. O'Riordan, Charles T. V. Benson, William P. McArthur, Eustace M. Parsons-Smith, Lionel C. Hayes, John Gilmour, Campbell Robb, and Eric T. Gaunt.

INDIAN MEDICAL SERVICE.

Lieutenant-Colonel G. W. P. Dennys, Administrative Medical Officer of the North-West Frontier Province, has, on being appointed Principal Medical Officer at Aden, been reverted from civil to military employment. Lieutenant-Colonel J. G. Jordan, Civil Surgeon at Darbhunga, has been granted furlough from India on relief by Captain Maxwell Mackelvie. Major S. Browning Smith has been appointed to officiate as Sanitary Officer of Eastern Bengal and Assam during the absence on leave of Lieutenant-Colonel E. C. Hare. Major W. H. Kenrick, Civil Surgeon of Nimar, Central Provinces, has been granted three months' privilege leave. Captain H. S. Matson has been transferred from Meiktila and appointed Civil Surgeon of Mogok, Burma, in place of Major A. Fenton, transferred. Captain G. Browse, Captain S. Haughton, and Lieutenant R. N. Chopin have passed the higher standard test in Pashtu. Captain C. H. Brodribb has been appointed a Specialist in Advanced Operative Surgery to the Fifth (Mhow) Division. Captain N. S. Sodhi has been posted temporarily for plague duty in the Punjab. Captain J. Morison has been appointed to officiate as Civil Surgeon of Sibsagar. Captain D. C. V. Fitzgerald, in charge of the Sibsagar jail, has been relieved by Captain J. Morison. Captain S. B. Mehta has been posted to plague duty in the Punjab. Captain H. G. S. Webb has been appointed a Specialist in Bacteriology and placed in charge of the Brigade Laboratory at Jubbulpore. Captain W. Tarr has taken over duty as Superintendent of the Central jail at Jubbulpore. Captain G. F. I. Harkness has been posted as Civil Surgeon of Dera Ismail Khan. Captain W. L. Trafford has joined for duty in the United Provinces of Oudh and Rodhilkhand. Captain G. D. Franklin, Agency Surgeon at Meshed, has been appointed to act as His Britannic Majesty's Consul-General and Agent to the Government of India in Khorasan, in addition to his other duties. Captain W. M. Anderson has been granted privilege leave combined with furlough and study leave out of India for a period of two years. Captain F. C. Rutherfoord, Civil Surgeon of Belaspur, Central Provinces, has been granted three months' privilege leave. Lieutenant A. J. H. Russell has been appointed a Specialist in the Prevention of Disease and placed in charge of the Brigade Laboratory at Secunderabad. Lieutenant J. Davies, Superintendent of the Albert Victor Asylum for Lepers at Goira, has been granted one year's combined leave home from India.

SPECIAL RESERVE OF OFFICERS.

Royal Army Medical Corps.

Alexander Cosgrave Court to be Lieutenant (on probation) (dated June 17th, 1910).

TERRITORIAL FORCE.

Royal Army Medical Corps.

1st East Lancashire Field Ambulance: The undermentioned officers are borne as supernumerary whilst serving with No. 18 Field Ambulance, Royal Army Medical Corps, Special Reserve (dated March 7th, 1910): Lieutenant-Colonel John B. Mann, Major William B. Pritchard, Captain Charles Roberts, and Captain Henry G. Smeeth.

2nd East Lancashire Field Ambulance: The undermentioned officers are borne as supernumerary whilst serving with No. 18 Field Ambulance, Royal Army Medical Corps, Special Reserve (dated March 7th, 1910): Major Fred D. Woolley, Captain George Ashton, and Lieutenant Thomas Carnwath. Charles Henry Stennett Redmond to be Lieutenant (dated May 1st, 1910).

3rd East Lancashire Field Ambulance: The undermentioned officer is borne as supernumerary whilst serving with No. 18 Field Ambulance, Royal Army Medical Corps, Special Reserve (dated March 7th, 1910): Lieutenant William H. P. Hey.

Attached to Units other than Medical Units.—Lieutenant Andrew E. Hodder is borne as supernumerary whilst serving with No. 18 Field Ambulance, Royal Army Medical Corps, Special Reserve (dated March 7th, 1910).

DEATHS IN THE SERVICES.

Surgeon Moyle Breton, R.N. (retired), aged 41 years, at Guildford. He entered the Royal Navy in 1897, and in 1904 was appointed to the *Victory* at Portsmouth. He retired in 1906 in consequence of ill-health.

Captain E. D. Simson, I.M.S., at Nowshera, India, from cholera. He entered the Indian Medical Service as Lieutenant in 1907.

THE KING AND QUEEN AT HASLAR.

In connexion with their Majesties' visit to Portsmouth the King and Queen visited Haslar on July 23rd. They were received at the Hospital by Inspector-General T. D. Gimlette, C.B., and subsequently made a tour of the buildings and spoke with several of the patients.

The first general meeting of the medical branch of the Navy League will be held to-day (Friday) at the University of London, Imperial Institute, at 12.45 P.M.

Correspondence.

"Audi alteram partem."

THE MEDICAL PROPOSALS OF THE MINORITY REPORT.

To the Editor of THE LANCET.

SIR,—In THE LANCET of July 23rd appears a somewhat lengthy article under the above heading, which is further entitled "An Appeal to the Medical Profession." It is written by two London consultants and a graduate in Arts of the University of Oxford, presumably not a member of our profession. Its object is to warn the general practitioners of the country of the professional revolution about to be in the near future, and it points out with much sympathy that, whatever may be their individual views on this subject, it is useless to contend for what has been condemned "by all political parties" in the State. If this statement is true, none can deny the gravity of the present crisis, but we may be permitted to examine a little critically these conclusions so disastrous for—I will not say the whole—but the great bulk of the profession. In the first place, where matters of so great importance for a large class of the community are put forward authoritatively in a leading medical journal, it is justifiable to consider the authority of those putting them forward, and what credentials they have for thus addressing a class to which they do not directly belong. While none can deny the academic distinction of the writers, it may certainly suggest itself to the minds of some of your readers that beyond the aforesaid distinction there is little else to give weight to the very decided opinions enunciated. Were they confessedly the opinions of those experienced in the wants of the general practitioner, who had witnessed for years past the increasing difficulties and hardships brought upon the profession by the discouragement of parental and individual responsibilities among the poorer classes of the community through the, no doubt well intentioned, efforts of would-be social reformers; then, on that account alone, although surprised, we might feel bound to give them a respectful attention. But considering the source from which they emanate they must stand or fall according to their intrinsic merits only.

Let us look at these opinions "grounded upon the most expert medical and sociological research." The great bulk of the article is a *résumé* of the Minority Report, the views of four Commissioners who, however they may claim to be experts in sociological research, have no right to pose as medical experts. The only real medical expert on the Commission was Sir Arthur Downes, who is quoted with approval where he condemns certain suggestions of the Majority Commissioners. Its authors do not mention that Sir Arthur Downes, however he may dissent from the medical recommendations of the Majority, is altogether opposed to those of the Minority, and would have little sympathy with this appeal to his profession. It is possible that some of us might have more confidence in the views of Sir Arthur Downes than in those of the writers of this appeal. Of our wants and necessities he is presumably a better judge and would as gladly relieve them.

It is to be noted that reference is also made to the *Times*. It is a pity your readers were not a little more fully instructed in what that important organ of public opinion says in this matter. On April 9th last the *Times*, in a leading article, says of the proposals of the Minority:—

> They are framed in a Utopian spirit, which is highly attractive to some temperaments, and goes a very long way to explain the acceptance of them in certain quarters.

Again—

> However good the intentions of their authors may be, we are convinced they would not only fail to remedy the evils at which they are aimed, but would greatly aggravate them.

In an editorial published on June 29th last the same paper says of the Minority Report:—

> It has been represented to the public as a masterly document, and praised by impulsive admirers for its scientific precision and other qualities apart from the merit of the specific proposals. We are apparently expected to accept the latter on the strength of the former.

To the claim that it is a detailed and finished scheme, the *Times* says:—

> Detailed and finished is what it is not. It is broadly sketched, but the details of administration, which are all important in practice, are lacking.

After commenting on the general vagueness of the whole Report, the article concludes with the following commentary on some of the arguments of the Commissioners:—

> It is hardly surprising that our correspondent finds it difficult to believe that such arguments are a serious contribution to the literature of the subject.

This is the report that Mr. H. Beckett Overy and his co-signatories appeals to the profession to support. They confess that at the present time it is lacking in that support, and there I agree with them, but I cannot help thinking there is little in this article likely to alter the present professional views on the subject. In numerous places the suspicions of medical practitioners are more likely to be aroused than allayed. For instance—

> It is the deliberate intention of the Minority to confine the ministrations of the public health authority, so far as they are gratuitous, to those who cannot afford to pay.

Without commenting on the probable selection of the latter under conditions where no test is allowed it is impossible to lose sight of the enormous harm that might be done to the profession by the State provision of medical services at inadequate rates of payment. "They do not desire to withdraw a single patient from the practice of any private practitioner," but they vaguely suggest a machinery, the only intelligible working of which would probably ruin many practices—i.e., among those carried on in poor and working-class districts. Again, in the Minority Report what is meant by the criticism of the Poor-law refusal to grant medical relief "to those who can manage to pay for some cheap substitute," if it does not mean to disparage those practitioners who consent to attend poor persons for small fees? It is true anonymous practitioners from poor districts are quoted who appear to deny that this class of practice is worthy of any consideration, and it is not unlikely that such views seem reasonable to those who naturally regard the small fees that many of us have to accept as below what the dignity of the profession would demand.

"The very poor patients who come to most practitioners are exceedingly few in number, and are not a desirable addition to their *clientèle*." Do the writers of this imagine that such a statement will appeal to the practitioners of any

neighbourhoods except the most thriving and well-to-do? They will appear grotesquely untrue to the great majority in all the poorer districts of the country. I know from my own experience that not a few derive *all* their income from such sources. Again, we are told that at the present time one-third of the profession hold public appointments. As the vast majority of them are only part-time officials, who would probably not desire to give up private practice, the whole of this large body would run the risk of being deprived of their offices. Whether they would be satisfied by the advantage likely to be derived by the clearance of many of their competitors out of the field of private practice is more than doubtful. Many would prefer to compete with their present professional neighbours on equal terms rather than as whole-time State doctors.

It is admitted by the writers there is one thing that can militate against the Minority view of the private practitioner's future, which is the crux of the whole question. "If there is to be a gratuitous State service, or one without any but nominal charges, then the medical profession must have nothing more to say to the Minority proposals." Here we are on common ground. It is on account of this almost certain result of such a scheme that I trust the profession will adhere to its present attitude of leaving the Minority proposals severely alone. The writers of the "appeal" frankly admit this danger, but point out an infallible preventive. Until they can show us something better than "the Consistent Code" to recover all charges from those proved able to pay for gratuitous medical services, in my opinion they will have little chance of converting the medical profession to their views. I would specially quote the following: "The point to be enforced is that there is *no inherent difficulty* in recovering the cost of treatment from patients. *It has been done already* to a large extent. Given a *properly* framed code and the *adequate* machinery, it will be as *easy* as the collection of *rates and taxes* to restrict our medical service to the *destitute* by this process of charge and recovery."

The italics are my own and will possibly suggest a good deal to thoughtful readers. For myself I would like to say I have found considerable inherent difficulties in recovering medical charges from patients admittedly not destitute. What might be done by "properly" framed codes and "adequate" machinery I cannot tell, but our present legal system is in my opinion hopelessly inadequate. That its recovery might be as easy as the recovery of rates and taxes from the destitute I am willing to admit, but I did not know that such recovery was easy. I am quite at one with the writers as to the restriction of gratuitous medical relief to the destitute, but I have gravely misread the Minority Report if it was the intention of the Minority Commissioners to restrict such relief to the destitute.

I am, Sir, yours faithfully,

July 23rd, 1910. MAJOR GREENWOOD.

THE SUPPRESSION OF QUACKERY.

To the Editor of THE LANCET.

SIR,—The letter of Mr. Macleod Yearsley in THE LANCET of July 23rd is to the point, and one may hope that his proposal to found a society for the suppression of quackery may meet with an enthusiastic reception amongst our profession. For some time past I have had the intention of forming an organisation of the kind and should be glad to join forces in so excellent an object. As regards the petition to the General Medical Council, I may say that a petition addressed by myself to that body met with no better fate than Mr. Yearsley's. After a prolonged study of various Acts of Parliament and other documents I formed an opinion that there is ample legislation in existence for the suppression of quacks and quackery—at any rate, so far as London and ten miles around is concerned. Absolute summary powers were conferred on the Royal College of Physicians of London for that purpose, and were exercised by that body intermittently for some hundreds of years. The rights of the College were reiterated in every subsequent Medical Act up to the short amending Act of 1860, wherein the College re-affirmed its charter rights but abolished the "elects" whose duty it was to administer the penal clauses. Only a year or so ago the College asserted those rights once again in protesting against the proposed charter of the British Medical Association. It has been held in some quarters that the powers of the College were merged in those of the General Medical Council by the Act of 1858.

Now all this is absolutely pertinent to the constitution of the General Medical Council. Stringent statutory powers against quackery exist, and if they are not in the hands of the Council they are in the hands of the College and *vice versâ*. My petition, however, was thrown out by the Executive Committee of the Council, and the discussion of an all-important matter was thus indefinitely shelved. If the penal powers of the College were absorbed by the Council, then the contention that the Act of 1858 conferred only limited powers upon that body falls to the ground. If not, the duty rests with the Royal College of Physicians, despite the fact that the small amending Act of 1860 abolished their machinery—their fundamental duty remains unrepealed. If the Council refuses to discuss so vital a matter, should not the British Medical Association approach the Privy Council directly on the point?

It is clearly better to act on existing laws than to attempt to get new ones. Lastly, I may say that as a layman I secured legal advice and opinion as to the scope and meaning of many of the Medical Acts and other documents concerned. What I asked the Council specifically to do was to obtain an authoritative legal opinion as to the existence of special legislation adequate for the suppression of quackery, and as to its present whereabouts as regards administration.

Surely the public and the medical profession are entitled to ask from the General Medical Council for more light upon matters so closely connected with their constitution.

I am, Sir, yours faithfully,

Welbeck-street, W., July 25th, 1910. DAVID WALSH.

To the Editor of THE LANCET.

SIR,—It is to be hoped that Mr. Macleod Yearsley will not limit the aims of the society he proposes to the suppression of quack advertisements, but that it will endeavour to extend the powers of the General Medical Council, which have long required reformation. It is surely not impossible to obtain for it powers similar to that possessed by the Incorporated Law Society. Then the views of the profession might be more firmly enforced when legislation affecting its interests was under consideration. The remuneration of all county medical officers of health might then more nearly approximate that of county court judges and the district medical officer's salary equal that of a revising barrister: the work, responsibility, and the issues at stake would surely commend it. Misleading quack advertisements would then, perhaps, cease to offend, and the "Drs." (with the qualifying inverted commas) would

> "Fold their tents like the Arabs,
> And as silently steal away."

I am, Sir, yours faithfully,

W. J. ERNELY SUMPTER, M.D.

Sheringham, July 26th, 1910.

METALS AND MICRO-ORGANISMS.

To the Editor of THE LANCET.

SIR,—Upon pp. 1014 and 1015 of your issue of April 9th, 1910, appears an abstract of a communication to the Royal Society by Dr. A. C. Rankin, demonstrator in bacteriology at McGill University. This abstract, entitled "Metals and Micro-organisms," seems to me somewhat contradictory in its statements, and also describes as a "suspicion" what has long been recognised as a fact. The points to which I wish to draw attention are as follows:—

The statement is made that water containing the typhoid bacillus and kept in a clean copper bowl becomes sterile. Almost immediately below occurs the statement that relatively large areas of pure zinc exposed in water contaminated with colon bacilli bring about recognisable but not extreme destruction of bacteria; and that aluminium and copper under similar circumstances have no perceptible effect. I think it is clearly evident that these two statements are diametrically opposed; and later in this abstract these two conditions regarding toxicity again seem to be in opposition.

Rather extensive work along these lines has been carried on in this department by Dr. Geo. T. Moore and myself and reported in Bureau of Plant Industry Bulletins Nos. 64

and 76, entitled "A Method of Destroying or Preventing the Growth of Algæ and Certain Pathogenic Bacteria in Water Supplies" (issued May 7th, 1904), and "Copper as an Algicide and Disinfectant in Water Supplies" (issued April 5th, 1905). We have very clearly shown the sterilising power of copper upon the colon bacillus and typhoid bacillus and the cholera spirillum. In the case of copper at least there can be no doubt that the toxicity of the metal or the salt is due to the ion, and in my experiments I have found carbon dioxide rather than oxygen to be an important factor limiting the destruction of bacteria. Under separate cover I am sending to you a publication entitled, "The Effect of Copper upon Water Bacteria," by Mr. T. D. Beckwith and myself, that deals with some experimental work upon this subject.

I am, Sir, yours faithfully,

KARL F. KELLERMAN,
Physiologist in Charge, United States Department of Agriculture, Bureau of Plant Industry (Soil Bacteriology and Water Purification Investigations).

Washington, D.C., July 12th, 1910.

OPHTHALMIA NEONATORUM.

To the Editor of THE LANCET.

SIR,—May I point out that you have omitted to include this town as one of the districts in which ophthalmia neonatorum is compulsorily notifiable? The Order of the Local Government Board came into force on May 18th last. We are, therefore, entitled to rank ourselves with Chester, Stoke-on-Trent, and the 15 States of the United States of America! Credit to whom credit is due, Mr. Editor.

I am, Sir, yours faithfully,

J. HEDLEY MARSH,
Medical Officer of Health.

Macclesfield, July 23rd, 1910.

GRAIN ITCH.

To the Editor of THE LANCET.

SIR,—In an annotation in THE LANCET of July 9th an account was published of "Grain Itch," with a request to know whether the disease occurred in this country. Whilst acting as locum tenens in Somersetshire a patient of mine was employed during harvest to carry bundles of straw into a loft. This was followed the next day by a pustular eruption on the arms, which eventually subsided into congested-looking bluish spots which irritated. I did not examine the straw, so cannot furnish any further details of the case.

I am, Sir, yours faithfully,

County Hospital, Guildford, July 23rd, 1910. H. J. FARDON.

THE PETROL REBATE.

To the Editor of THE LANCET.

SIR,—My experience exactly tallies with that of your correspondent "8 H.P.," and it seems evident that the conditions attaching to the claim for rebate are intentionally so framed as to render its recovery impossible. The Excise officer to whom I applied pointed out, in the most courteous terms, that the form of claim supplied by his department (which I had duly filled up) contains the words "on which the full duty has been paid *to the Crown*" (my italics); and that there is more in this wording than meets the non-legal eye of the average medical motorist. It seems that proof is necessary (in the case of every tin of petrol used during the specified period of about eight months) of payment of full duty (1) by the consumer to the retailer; (2) by the retailer to the manufacturer; and (3) by the latter to the Crown; and it must be shown that this last payment by the manufacturer actually reached the national coffers!

I am, Sir, yours faithfully,

July 23rd, 1910. TWO CYLINDER.

Mr. Vaughan Grey's matinée in aid of Prince Francis of Teck's appeal on behalf of the Middlesex Hospital, which was to be given at the Boudoir Theatre, Pembroke-gardens, to-day, Friday, July 29th, was unavoidably postponed until Thursday, Nov. 10th. We are asked to state that all tickets issued for July 29th will be available on the latter date.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

Ashby Memorial Scholarship.

THE Ashby Memorial Scholarship of the Manchester University was founded as a memorial of the late Dr. Henry Ashby for the promotion of the study of the diseases of children, to which he had devoted his life's work. This year two of the aspirants have been adjudged equal, one being Hugh T. Ashby, M.B., B.C. Cantab., M.R.C.P. Lond., the son of the late Dr. Ashby, and the other C. P. Lapage, M.D. Vict., M.R.C.P. Lond., Dr. Ashby graduated at Cambridge in 1904 with honours in the Natural Sciences Tripos, and in 1908 became M.B. Dr. Lapage gained the John Henry Agnew scholarship in diseases of children in 1901, graduated in medicine in the Victoria University in 1902, and obtained the M.D. in 1905. He is now lecturer in school hygiene in the University. The Dauntesey Medical Scholarship has been awarded to Lily Allan, the Platt Biological Exhibition to R. G. Livens, and the University Prize in Medicine to A. G. Bryce.

Hope Hospital.

The Salford guardians appear to have a good deal of trouble with the hospital at Hope. At their recent meeting the report of the infirmary committee mentioned that there was a request from the medical superintendent for the addition of two more nurses and one house sister to the staff. One can understand the startling effect that this request would have on the guardians, who think of the rates as well as of the poor, and it is not perhaps surprising that a resolution was moved not to accede to the request. Happily, however, an amendment was carried adjourning the consideration of the question until the next meeting. This will give time to consider the grounds for the request. It is scarcely to be imagined that the experienced medical superintendent would ask for such a reinforcement of the nursing staff without sufficient reason, and the adjournment will give time for an appeal from guardians startled to guardians calm and properly informed. Another matter adjourned was the question of a new dietary for the inmates.

Health of Lancashire Scholars.

The recent statements made at the meeting of the Lancashire education committee at Preston on July 18th are sufficiently alarming as regards the health of the children. It is a serious matter that of the 60,000 examined 12,000 should be suffering from skin disease, while 11,000 had defective vision, many of whom were without spectacles. Whether any of the defective vision is due to small type or bad print in the school-books is not stated, but it is, of course, eminently desirable that this source of mischief should be avoided.

Hospital Sunday Fund.

It was decided at a meeting of the supporters of this Fund, the Lord Mayor, Mr. Charles Behrens, in the chair, that £4100—i.e., £700 more than last year—should be distributed among the medical charities of Manchester and Salford. The following statement shows the apportionment, and cheques for the several amounts have been issued to the respective institutions by the treasurer (Mr. John F. Haworth, J.P.): Royal Infirmary, £1264 16*s.* 1*d.*; Children's Hospital, £500 0*s.* 7*d.*; Ancoats Hospital, £331 1*s.* 6*d.*; Sick Poor and Private Nursing Institution, £328; St. Mary's Hospitals, £277 18*s.* 11*d.*; Hospital for Consumption, £258 18*s.* 10*d.*; Salford Royal Hospital, £233 2*s.* 11*d.*; Royal Eye Hospital, £210 19*s.* 7*d.*; Hospital for Incurables, £199 7*s.* 3*d.*; Northern Hospital, £134 16*s.* 7*d.*; Hospital for Skin Diseases, £104 17*s.* 10*d.*; Victoria Memorial Jewish Hospital, £104 11*s.*; Ear Hospital, £40 19*s.* 2*d.*; Dental Hospital of Manchester, £36 4*s.* 4*d.*; Hulme Dispensary, £21 17*s.* 4*d.*; Greengate Dispensary, £16 16*s.* 6*d.*; Chorlton-on-Medlock Dispensary, £13 9*s.* 1*d.*; Christie Hospital, £11 2*s.* 1*d.*; Lock Hospital, £9 13*s.* 11*d.*; Homœopathic Institution, £1 6*s.* 6*d.*; total £4100.

July 26th.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

The New St. Paul's Eye Hospital: Laying the Foundation-stone: The Treatment of Ophthalmia Neonatorum.

THE Earl of Derby on July 20th laid the foundation-stone of the new St. Paul's Eye Hospital and George Edward Walker Memorial at the junction of Oldhall-street and King Edward-street, close by the David Lewis Northern Hospital. A special feature of the new hospital will be a ward containing 10 beds and 10 cots for the treatment of ophthalmia neonatorum (the 10 beds being set apart for the mothers of the infants treated) and 2 wards, including isolation rooms, of 10 beds each for boys and girls respectively. When this department is built Liverpool will have the distinction of being the first city in Great Britain to make a special provision for the treatment of ophthalmia neonatorum. Amongst the speakers were Dr. E. W. Hope, the medical officer of health, who, in seconding the vote of thanks to Lord Derby for his part in the ceremony, remarked that the work of the hospital in the future would be still more of a preventive character. The health committee of Liverpool realised the great importance of the preventive measures which could be adopted to save the eyesight of young infants. That institution, he said, had been in the forefront of this good work, which commended itself not only to every subscriber, but to the city authorities and others interested in the young. In Dr. Hope's recently issued annual report for 1909 on the health of Liverpool, he enlarges on the prevalence of ophthalmia neonatorum in this country, and alludes to the statements of well-known authorities that over one-third of the inmates of schools for the blind lost their sight as a result of this disease. On the other hand, he states it is no less certain that if the disease be brought under efficient treatment when the symptoms first make their appearance, the eyes can be saved from serious injury and the sight preserved. Under the Midwives Act midwives are compelled to inform the local supervising authority of such cases and to call in medical assistance. The gratifying result is that in 1909 only one case of blindness was due to the neglect of a Liverpool "midwife," and she was an unregistered woman who was carrying on an illegal practice. A large amount of this good result, the report states, has been due "to the provision of a small ward of four beds at St. Paul's Hospital and the interest taken in the cases by Dr. Arthur N. Walker." In this ward the infants of but a few days old can be received with their mothers in order that the necessary treatment may be carried out, and also that they may not be deprived of their natural nourishment. "This last point is most important, as Dr. Walker reports that he is more and more impressed with the difficulty of saving severely-infected eyes in bottle-fed infants." The number of cases of ophthalmia neonatorum reported to the medical officer of health was 60 during the year 1908 and 59 during 1909. Amongst those present at the ceremony of laying the foundation-stone were the Lord Mayor and Lady Mayoress, the Lord Bishop of Liverpool, Sir Thomas Royden, Sir James Barr, Colonel Kiffin-Taylor, M.P., Dr. Hope, Dr. A. A. Mussen (assistant medical officer of health), and several members of the late Mr. George Edward Walker's family.

Liverpool's Garden Suburb: Foundation-stone of the First House.

The Marquis and Marchioness of Salisbury on July 20th took a leading part in the inauguration of Liverpool's first garden suburb at Wavertree. Her ladyship laid the foundation-stone of the first house. The suburb will cover 180 acres between Wavertree Nook and Broadgreen, and it is intended to build not more than 10 or 12 houses on each acre. Lord Salisbury has leased the land for 999 years to the Liverpool Garden Suburb Tenants' Society, of which Mr. Henry Vivian, M.P., is the chairman. His lordship said that a close study of the scheme had made him a decided supporter of the co-partnership system. He also confessed to feelings of mortification and indignation at finding in Liverpool land belonging to his family on which were streets of poor and unworthy houses. This was not the fault of himself or his immediate predecessors, but he hoped such things would not be possible in the future. The society has been founded to lay out and develop garden suburbs in the neighbourhood of Liverpool. It will afford the people of Liverpool an opportunity of living in a house with a garden at a moderate rent and within easy reach of work. The methods to be employed are the erection of substantially built houses, provided with good sanitary and other arrangements; to let the houses at ordinary rents to investors desiring to become tenants; to pay out of the rents interest on shares, the surplus profit being set apart as dividend for the tenant investors. Mr. Henry Vivian, in explaining the purposes of the scheme, said that he did not stand there advocating a theory that had not been tried. He was able to point to substantial facts in the direction of the development of garden suburbs at Ealing, Hampstead, Harborne, Port Sunlight, &c., all of which would ultimately promote the health and happiness of the people.

July 26th.

NEWCASTLE-ON-TYNE.

(FROM OUR OWN CORRESPONDENT.)

Prevention of Consumption.

DURING the fortnight commencing to-day, July 25th, there will be held in Newcastle an exhibition under the auspices of the National Association for the Prevention of Consumption. This has been arranged by the health committee of the Newcastle corporation, who have invited this itinerant exhibition to make a short visit to the city. In addition to the exhibition of object-lessons showing the cause and results of tuberculosis and methods of treating the disease, there will be given short popular addresses by various medical men of the town. It is to be hoped that the exhibition will be as successful in this town as in others recently.

Large Bequests to Local Charities.

Mr. A. E. Ward, of Cheapside, London, the trustee of the Robert Scott Charity, has recently made apportionments to various charities in the neighbourhood, which have benefited as follows: the Newcastle and Northumberland Consumption Sanatorium at Barrasford, £7500; the Poor Children's Holiday Association (for the purposes of the Children's Sanatorium at Stannington), £8500; the Northern Counties Orphan Institution, Newcastle, £2000; and the Hospital for Sick Children, Newcastle, £2000. The trustee observes that he has made the larger apportionments in favour of the sanatoriums in view of the interest taken by the testator in the subject of tuberculosis and the treatment thereof. With regard to the Children's Sanatorium of the Poor Children's Holiday Association, the trustee remarks that he has noticed the recent gift of £4000 by Sir William Stephenson[1] and considers it evidence of local appreciation of the work carried on there, and hence he has made the largest grant in favour of that institution.

Post-Graduate Courses at the Royal Victoria Infirmary, Newcastle-on-Tyne.

A pamphlet containing scheme and time-table has been issued from the Royal Victoria Infirmary indicating that the staff have arranged to give some post-graduate tuition in the latter weeks of August and the first week of September this year. The classes arranged include a general course which will be entirely clinical and special courses for those interested in special subjects. It is some years since any attempt was made in Newcastle to run definite post-graduate courses, and it is to be hoped that the present scheme may be a success, for it ought to fill a well-marked gap in medical study in the north-east of England.

Convocation at Durham.

On July 23rd a Convocation was held at Durham in Bishop Cosin's library, Sir George Hare Philipson, the senior pro-Vice-Chancellor presiding. There was one honorary degree, Mr. Justice Grantham being the recipient of the degree of D.C.L. Dr. Gee, in presenting Sir William Grantham for the degree, made many appropriate remarks. Afterwards ordinary degrees were conferred, mostly medical, the following being the recipients:—M.D.: N. A. Eddlestone, H. M. Levinson, R. O. Mather, H. R. McAleenan, R. R. Pirrie, S. Robson, A. Smith, and J. W. Smith (all of

[1] THE LANCET, June 18th, p. 1728.

the College of Medicine, Newcastle). M.D. (practitioners): W. W. Bell, H. Collier, H. H. P. Cotton, W. B. Darroll, and W. H. Hargreaves (all of the College of Medicine). M.S.: H. M. Levinson and S. Robson (College of Medicine). M.B., B.S.: I. Bainbridge, Helen Clarke, R. V. Clayton, S. F. Green, J. Hare, S. Littlewood, G. C. M. McGonigle, R. E. Reindorf, E. H. Shaw, S. Worthington, and J. C. Young (all of the College of Medicine). M.B.: J. A. Caulcrick (College of Medicine). B.Hy.: W. G. T. Hepplewhite and F. Rahtkens (College of Medicine). D.P.H.: W. G. T. Hepplewhite, Sophia Jackson, K. Jamset, J. A. Neilan, F. Rahtkens, and H. M. Stumbles (all of the College of Medicine).

July 25th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Graduation Ceremonial at the University of Edinburgh.

ON July 22nd the medical graduation ceremonial at the University of Edinburgh was held in the McEwan Hall, Sir William Turner, K.C.B., the Vice-Chancellor, presiding. The degree of M.D. was conferred upon 74 Bachelors of Medicine, five of whom received gold medals for theses — namely, George Carmichael Low, William Kelman Macdonald, William McDonald Scott, William Halliday Welsh, and James Young. The degrees of M.B., Ch.B., were conferred on 115, including 10 women, 3 of whom graduated with first-class honours and 8 with second-class honours. The Ettles scholarship, which goes to the best graduate of his year, was awarded to Francis Gordon Bell. The degree of B.Sc. was conferred on two gentlemen in the Department of Public Health and the Diploma in Tropical Medicine and Hygiene on two. The Cameron prize was awarded to Professor August Bier of Berlin for his important additions to practical therapeutics embodied in his work on spinal anæsthesia and on hyperæmia as a therapeutic agent. The work of Professor Bier was suitably set forth by Sir Thomas R. Fraser, and when the prize was presented Professor Bier got a very enthusiastic reception from the whole audience. The promotor for the occasion was Professor F. M. Caird, who then addressed the graduates, congratulating them on their success, and impressed upon them that the master key for all the difficulties in the future, as in the past, was to be found in unremitting industry.

Medico-Psychological Association.

The annual meeting of the Medico-Psychological Association of Great Britain and Ireland met during last week in Edinburgh. The association met on July 21st in the Royal College of Physicians, Queen-street, Professor W. Bevan-Lewis, M.Sc., Wakefield Asylum, the retiring President, being in the chair. The principal business at this sederunt was the election of the council and officers. Dr. John Macpherson (Edinburgh) was elected President; Dr. Thomas Drapes (Ireland), Vice-President; and Dr. H. Hayes Newington, treasurer. In the afternoon Professor Bevan-Lewis again presided, and after Dr. T. S. Clouston had proposed a vote of thanks to the retiring president and officers Professor Bevan-Lewis introduced his successor, Dr. Macpherson, whom he introduced into the presidential chair of office. Dr. Macpherson delivered an address on the Conceptions of Insanity and their Practical Result. He showed that the conceptions which had influenced the study and progress of psychiatry were all theories of causation and were (1) the volitional concept, (2) the empirical concept, and (3) the scientific or ideal concept. Mr. J. Carswell (Glasgow) read a paper on the Treatment of Incipient Insanity in Observation Wards. Other papers were by Dr. W. Ford Robertson on Infective Foci in General Paralysis and Tabes Dorsalis; by Dr. J. P. Sturrock on Certain Forms of Insanity in the Criminal Classes; and by Dr. R. M. Marshall on Periodic Attacks of Mental Excitement and Depression in the Chronic Insane. In the evening of July 21st the annual dinner of the association took place in the Caledonian Station Hotel. On July 22nd proceedings were again resumed in the Royal College of Physicians, Dr. Macpherson presiding. Papers were read by Dr. A. R Urquhart (Perth) on Lunacy Administration in Scotland, with Special Reference to Royal Asylums; by Dr. Lewis C. Bruce (Murthly) on the Deviation of Complement in Connexion with the Diseases known as Mania; by Dr. Hamilton C. Marr, Dr. Ivy McKenzie and Dr. C. H. Browning, read by Dr. McKenzie, on the Treatment of Protozoal Diseases; and by Dr. C. T. Ewart (Claybury) on Eugenics and Degeneracy. Dr. Macpherson intimated that Dr. Morton, Scottish Western Asylum Research Institute, had obtained the bronze medal of the association for his paper on the Chemistry of the Cerebro-spinal Fluid in Cases of Insanity, which Dr. Morton then read before the association. Dr. Winifred Muirhead (Edinburgh) read a paper on the Wassermann Reaction in the Blood and Cerebro-spinal Fluid, and the Examination of the Cerebro-spinal Fluid in Cases of Insanity; and Dr. Gilmour, of the Scottish Western Asylums Research Institute, followed with a paper on the Wassermann Reactions, a more Reliable Technique. The members of the association were then entertained to lunch at Craig House, Morningside, by the managers of the Royal Edinburgh Asylum. After luncheon a discussion took place in the Tudor Hall on Mental Excitement. The discussion was opened by Dr. G. M. Robertson, physician-superintendent of the Royal Asylum, and various members took part. Dr. Leonard D. H. Baugh, Gartloch Asylum, then read a paper on a Clinical Study of Anæsthesia, Mental Confusion, and Moods in Epilepsy, Confusional Insanity, and Hysteria. Later in the afternoon a garden party was held at Craig House, but as unfortunately the weather was wet the grounds could not be seen to advantage. On Saturday, July 23rd, the closing day of the annual meeting, the members of the association paid a visit to Bangour Asylum on the invitation of Dr. Keay and the Edinburgh Board of Lunacy. Dr. Keay read a paper on the segregation system as exemplified by Bangour village. The cost of maintenance per annum for patients from the Edinburgh district was £27 —but would be lower were all the beds occupied. There were 745 patients in residence and 128 unoccupied beds. After the nurses' home had been inspected luncheon was served to the guests and thereafter the rest of the asylum was visited.

New Medical Commissioner in Lunacy for Scotland.

Dr. Hamilton Clelland Marr has been appointed Medical Commissioner in Lunacy for Scotland in place of Dr. John Fraser, who has retired on attaining the age limit. Dr. Marr is a native of Govan, and was educated in Glasgow University. He took his degree of M.B., C.M. in 1892 and his M.D. three years later, in both cases graduating with commendation. He then became an assistant at Woodilee Asylum, and later was appointed an assistant in the Crichton Institution, Dumfries. Later he returned to Woodilee as senior assistant, and subsequently was appointed assistant medical superintendent. In 1901, on the retirement of Dr. Robert Blair, he was promoted to the position of medical superintendent of Woodilee Asylum. Dr. Marr is M'Intosh lecturer in psychological medicine in St. Mungo's College, Glasgow, and for some years has acted as secretary to the Scottish Division of the Medico-Psychological Society of Great Britain.

Resignation of Dr. T. S. Clouston of the Lectureship in Mental Diseases.

On the occasion of the resignation of Dr. Clouston of the post of lecturer in mental diseases to the University of Edinburgh the Court of the University at a meeting on June 13th minuted a resolution in appreciation of Dr. Clouston's services as University lecturer. The minute ran as follows:—

> The University Court has received with much regret the intimation of Dr. Clouston's resignation of the lectureship in mental diseases. The Court record with gratitude their appreciation of the valuable services that have been rendered by Dr. Clouston during the 37 years in which he has been a teacher of the subject in the University, first in connexion with the classes of practice of physic of Professors Laycock and Sir Thomas Grainger Stewart, and since 1879 as the holder of the University lectureship in mental diseases, which was instituted in that year. During this long period Dr. Clouston has proved himself a singularly successful and able teacher. His great reputation as a specialist in mental diseases and his eminence as a worker and writer on the subject have exerted an inspiring influence upon the large number of students who have attended his classes. They, as well as the University Court, have fully realised the great advantages of having as the lecturer on this subject a distinguished pioneer in the scientific study of disorders of the mind, and one of the first and most active of the promoters of the benevolent reforms in the care and treatment of the mentally afflicted which have signified the latter half of the previous century.

Protection of Early Child-life in Edinburgh.

On July 18th a meeting was held in the Hall of the Royal College of Physicians, at the invitation of the medical staff of the Royal Hospital for Sick Children, with the object of

promoting the coöperation of the various agencies dealing with the amelioration of the conditions of child-life in Edinburgh. Dr. G. H. Melville Dunlop presided, and Dr. A. Dingwall Fordyce made a preliminary statement, reviewing the measures which had been taken in different parts of the world with a view to the prevention of infantile mortality. Mr. H. J. Stiles, surgeon to the Royal Hospital for Sick Children, spoke strongly on the question of the prevention of tuberculosis among children. He referred especially to bone and joint tuberculosis, of which a great deal is seen in Edinburgh, and which he considered was due to infection partly from infected dwellings and partly from milk. Dr. W. Robertson, medical officer of health of Leith, spoke on his experience of a milk depôt. Professor Lodge, Dr. J. Stewart Fowler, Mrs. Russell, and Mrs. Somerville also addressed the meeting. A committee was appointed representing different agencies at work in Edinburgh in connexion with the protection of early child-life with a view to promoting coöperation and developing the possibilities of the work.

University of St. Andrews: Meeting of the Court.

At the last meeting of the University Court a communication was made intimating that the Treasury would sanction additional grants amounting in the aggregate to £40,000 per annum to the Scottish Universities, the portion allocated to St. Andrews being £6,000, provided that suitable schemes are submitted by the several University authorities. A supplementary estimate has been presented to Parliament which will admit of an additional grant of £4000 to St. Andrews for the current financial year. It was agreed to communicate with other Scottish Universities so that a conference might be arranged at which the amounts of the composition fees could be fixed. Under the scheme before the Court of the University of St. Andrews it is proposed that for one fixed fee per session each student in a particular faculty shall have the opportunity of attending such classes in that faculty as he may choose, with the approval of the Adviser of Studies.

Medical Research Award.

The medal and prize of the Medico-Psychological Association of Great Britain and Ireland has been awarded to Dr. Hugh Morton for the best dissertation on the "Biochemistry of the Cerebro-spinal Fluid in the Insane." Dr. Morton is attached to Gartnavel Asylum, Glasgow, and to the Scottish Western Asylums' Research Institute. The competition was open to all assistant medical officers of asylums in Great Britain and Ireland.

Vaccination in Glasgow.

During the past year the medical officer of health of Glasgow states that declarations of conscientious objection to vaccination were made in respect of 2653 children. This is 470 in excess of the number made during 1908, and brings up the total declarations made since the Act came into operation to 5310. It is frequently asserted that the result of withdrawing the compulsory provisions of the Vaccination Act in England has been to extend the practice of vaccination among infants. The results of the further amendment of the Act in England in 1907 are not yet available, but it may meanwhile be observed that the experience in Scotland is wholly opposed to the view. The last year of the old Act was 1905, and comparing its results with those which are now available for 1908 a pretty fair estimate may be formed of the rate at which a population is being prepared amongst which small-pox will spread in a manner of which this present generation has had no experience. The proportion of births regarding which declaration of conscientious objection was made in Glasgow was 9·2 per cent., but in the rest of Scotland it was 12·7.

Tubercle in the Milk-supply of Glasgow.

During the year 1909 the veterinary surgeon for the corporation of Glasgow caused 423 samples of milk obtained in country byres to be examined for tubercle. Among these 24 were found to contain tubercle bacilli. This is equal to a rate of 5·7 per cent., compared with 4·3 per cent. in the years 1908 and 1907. Similarly, of 122 samples obtained from town byres the number found tuberculous was 4 and the percentage 3·3, as compared with 4·6 in 1908. Contrasted with both is the result obtained in 47 samples from byres supplying milk to the city hospitals, none of which were found to contain tubercle bacilli. It is worthy of note that these herds are subjected to the tuberculin test, and the result now obtained is highly satisfactory.

Medical Appointment at Blairgowrie.

Dr. Dugald Revie, Blairgowrie, has been appointed medical officer of Strathmore Infectious Diseases Hospital, jointly owned by the burghs of Blairgowrie, Rattray, Alyth, and Coupar-Angus, in room of Dr. R. C. Macdiarmid, who has received a public appointment in New Zealand.

July 24th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Mr. Birrell and Midwives Legislation.

IN view of the recent conference of professional bodies which decided to press for midwives legislation for Ireland, the remark of Mr. Birrell in the House a few weeks ago that the matter is not as urgent in Ireland as in England has roused some surprise. In a letter to the daily papers the Master of the Rotunda Hospital, Dr. Hastings Tweedy, points out that the rate of mortality connected with pregnancy and child-bearing is in Ireland 6·3 per 1000 births, whereas in England it is 4·81. Moreover, "under the English Act untrained women are not permitted to practise as midwives, and the trained ones work under strict supervision. In Ireland there is no such control, and once a midwife has obtained her hospital certificate, the institution which qualifies her ceases to have power to influence her future conduct. She may be profligate, dirty, dishonest, or drunken; sepsis may follow her in epidemics, and yet there is no power available in Ireland to prevent her practising."

The Belfast Measles Epidemic.

During the week ending Saturday, July 16th, in the 22 town districts of Ireland there were 21 deaths from measles, and of these 20 occurred in Belfast and 1 in Londonderry; and during the three weeks ending Saturday, July 16th, there were in the 22 town districts of Ireland 73 deaths from measles, and of these 5 occurred as follows: 2 in Londonderry, 1 in the Dublin registration area, 1 in the city of Dublin, and 1 in Queenstown, while the remaining 68 all occurred in the city of Belfast. It will be interesting but may reveal a deplorable state of affairs when we get the total number of deaths in this terrible epidemic of measles which has visited Belfast.

July 26th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

A New Medical Temperance Association.

AT the International Temperance Congress held in London last year the medical abstainers of the German-speaking countries, of Scandinavia, of England, of the United States of America, and even of Russia, formed themselves into associations, but their French colleagues took no immediate action, and it is only quite recently that a similar combination of medical abstainers in the Latin countries has been organised. The new association is appealing to all medical practitioners who take a serious view of professional duty and find it helpful to set an example of total abstinence from alcoholic beverages.

Pain in Surgery.

At a meeting of the Academy of Medicine held on July 12th M. D. Picqué read a paper in which he showed that a surgeon might produce pain in two different ways—namely, either (1) from setting up local complications by rough and prolonged exploration of an injured or infected part, or (2) from inducing special mental states in predisposed individuals by inopportune examinations and useless questioning. He said that a knowledge of those special conditions of pain led to a rational method of preventing its occurrence. In hysteria it was particularly important to avoid doing anything that might be suggestive; the examination should be rapid and the diagnosis prompt. In hypochondriasis the rules to be followed were the same as in hysteria, but even greater care was necessary in applying them. In hysteria there was an immediate cerebral impression which soon disappeared,

whilst in hypochondriasis the patient's meditative propensity rendered the impressions durable. In making the examination necessary for arriving at a diagnosis, it was therefore important to avoid anything which might encourage the patient's morbid views or give support to his anxieties.

Effects of the Thermo-electric Bath.

At a meeting of the Academy of Sciences held on July 11th M. d'Arsonval made some remarks on a communication received from Dr. Doyen, entitled "Transmission of Heat without Injury to the Normal Tissues accomplished by Means of the Thermo-electric Bath." M. d'Arsonval said that the virulence of cancer cells was destroyed by the penetrating heat obtained by means of electric currents of high frequency and low tension in an apparatus which he had devised. In its original form the treatment was attended by the inconvenience that electro-coagulation took place and that the thickness of the tissues was reduced, but Dr. Doyen had succeeded in overcoming these defects by the interposition of isotonic saline solution between the electrode and the tissues. The effects of this thermo-electric bath were very interesting. The heating of the tissues might be observed with an alcohol thermometer so that the useful effect might be obtained—namely, a temperature from 55° to 58° C., at which the normal tissues were not injured. The temperature of the water might be lowered by a current of cold saline solution without interruption of the heating of the tissues. M. d'Arsonval said that the thermo-electric bath would be of great use in both medicine and surgery, for it destroyed the majority of pathological cells without harming the normal tissues, which were more resistant to heat. In surgery it prevented the re-inoculation of a wound with cancer cells.

July 26th.

VIENNA.

(FROM OUR OWN CORRESPONDENT.)

Resignation of Professor von Strümpell.

AN unusual occurrence amongst the teaching staff of our University supplies an unfortunate illustration of the unsatisfactory conditions prevailing in our higher bureaucracy. Professor von Strümpell, the famous physician and specialist for neurology, suddenly notified to the Senate and the Ministry that he had resolved to give up his position in this city. In explanation of this it must be remembered that after Professor von Schrötter's sudden death during the International Congress on Rhino-Laryngology in Vienna great difficulties had to be overcome before Professor von Strümpell could be prevailed on to accept the appointment as his successor. The new professor, who held an influential position in Germany, was not only offered very favourable conditions to induce him to come to Vienna, but he was promised also to have a completely free hand as regards the outfit of the old clinic to make it as modern and up to date as possible. His transference to Vienna was not viewed with unanimous approval. There were many who thought that we have already enough professors imported from Germany, and could very well supply ourselves the men necessary for such a position. On the other hand, the scientific thoroughness of the new professor was not congenial everywhere. Professor von Strümpell did not care to ingratiate himself, and there were difficulties, but the fault was not necessarily with the professor. The students and patients quickly perceived the advantage they derived from the presence of so eminent a man in Vienna. His idea was to make his clinic a centre of clinical teaching. This involved much time spent in the wards and class-rooms, and much expenditure of money in the purchase of apparatus and otherwise. He ordered what he thought necessary, but when the bills came in the officials of the Ministry of Education raised difficulties about payment, and when there was a debt of a few hundred pounds, which it seemed that he would have to pay himself, he lost patience and resigned his post. The news was received by the public with astonishment, and in medical circles as well as among other sections of the population the narrow-mindedness of the officials was severely criticised. It has been pointed out that the treatment to which the professor has been subjected is hardly creditable to the department concerned; it may be that in future a call to Vienna will be well considered before a man of recognised position accepts it.

Appendicitis in Elderly Patients.

At a recent meeting of the Medical Society Dr. H. Loebl discussed the subject of inflammation of the appendix in persons over 50 years of age, whom he classified as elderly patients. The condition must be termed a rare one, as only 3·66 per cent. of all cases of appendicitis were encountered after 50 years of age. He said that the appendix was well known to become smaller or even to be totally obliterated with advancing years, but opinions differed as to whether this was a phenomenon of senile atrophy or the result of inflammation. Appendicitis simplex was exceptional in old age, partial necrosis being the most usual lesion. The most important form of senile appendicitis was that which had been called by French authors *à forme néoplasique*, and was characterised by the formation of hard inflammatory tumours, which might be mistaken for malignant growths. A very frequent form of the disease was chronic adhesive appendicitis which gave rise to vague symptoms. All authors agreed that acute pain, local symptoms, and high fever were absent. The only symptoms were those of gastro-intestinal disturbance with others suggesting stenosis in the ileum or cæcum. Another form of senile appendicitis he called "hernial appendicitis" because of its increasing frequency as age advanced; it was perhaps due to the liability of elderly persons to all sorts of hernia. As the local symptoms in these various conditions were very often insignificant a correct diagnosis might be very difficult. The results of surgical treatment were less favourable than in younger patients, for complications were much more frequent.

The Tuberculin Treatment of Out-patients.

In a report by Dr. A. Müller on the tuberculin treatment of patients seen at the Moravian Tuberculosis Institute the results obtained in 600 cases were discussed, and the following details were given by him at a meeting of the local medical society. As no beds are available the institute has undertaken to instruct its patients in the personal care of their health and to keep strict observation by repeated surprise visits over all those found affected. For the latter purpose several medical practitioners consented to give their aid. No charge was made for treatment and the following method was adopted. Only cases considered to be of a mild description with subfebrile or slight feverish temperatures were selected, all other patients being sent to hospitals. The ambulatory patients were first tested by the von Pirquet method (cutaneous reaction), and the size of the resulting papule was considered as an indication of the patient's sensibility to the tuberculin. Accordingly an injection varying from 1-10000th up to 1-100th of a milligramme was made, and repeated after 48 hours with a tenfold dose until a definite infiltration and inflammatory reaction marked the site of injection. This was considered to be a proof of the injection of a therapeutically active quantity. The injection was repeated with the active quantity as soon as the local reaction had vanished. General or local reaction of a serious nature required a diminished dose. By this method Dr. Müller hardly ever reached doses of more than a milligramme, even after a treatment of several months. The results obtained were very satisfactory, including improvement of the general health and increase of weight, together with disappearance of night sweats, rheumatoid muscular pain, fever, and mental depression. The quantity of the sputum often increased at first, but soon diminished. The tuberculin employed was Koch's "old tuberculin," which was therefore found capable of doing much good, even in the case of patients following their employment under proper conditions. No harmful effect was noted during five years of continued use in the institute.

July 25th.

NOTES FROM INDIA.

(FROM OUR OWN CORRESPONDENTS.)

Malaria in Bombay City.

Dr. Charles A. Bentley, malaria investigation expert especially appointed by the Government to consider the problem in Bombay, has issued an interim report. He points out that no part of the city is free from malaria. He finds the only mosquito which spreads infection in Bombay is Nyssorhynchus stephensi, for which the multitude of wells in all parts of the city form ideal breeding-places. On the other hand, the

common mosquitoes in Bombay belong to species which have nothing to do with the transmission of malaria. Therefore, prevention of the dangerous anopheles rather than destruction of all mosquitoes must form the keynote of antimalaria sanitation in Bombay, and for this the natural circumstances of the island city form conditions favourable to the success of the campaign not to be found in any other part of India. Dr. Bentley details a large programme for controlling dangerous breeding-places, which he remarks can be carried out on an almost self-supporting basis.

Report of the Chemical Examiner of the Punjab.

In the last report of the chemical examiner for the Punjab it is remarked as a matter for congratulation that the use of arsenic in human poisoning cases has decreased, and this is believed to be due to the working of the rules under the Poisons Act, which came into force in 1907. During the year the Government had under consideration the advisability of taking action under the Poisons Act with reference to the juice of the *Ak*. But as *madar* (*Ak*) grows wild in some profusion it was decided that rules regulating the possession of *madar* would probably fail of their intended effect, and the matter was therefore dropped. A feature of the year was the decrease in the number of cattle-poisoning cases, which fell from 170 to 120. This is considered to be due to prompter action on the part of investigating officers, making the risk of detection greater. A curious case of death after inoculation from plague is recorded. A person in the Gujrat district died on the third day after inoculation, and doubtless popular opinion attributed the death to the "poison" which he was supposed to have absorbed. But a post-mortem examination showed that arsenic was present in the body, and presumably death was due to this cause, though the report does not explicitly say so. It would have been more interesting if some further details had been given, but the chemical examiner has no concern with the police action which may follow upon his scientific investigations. Possibly in some obscure report in the Gujrat district the story may have been told in full, and this poisoning case may have been cited in connexion with the prevention of plague in the rural parts of the Punjab. It should at least be noted by medical officers who are engaged in inoculation work.

Lahore Lunatic Asylum.

The lot of the native lunatics who find themselves in the Lahore Asylum is certainly one that speaks highly for the humanitarian policy of Government. In the triennial report on the working of the institution it is shown that friends and relatives of insane males now willingly bring these unfortunates for treatment, and lunatics who have been discharged have been known to return voluntarily. Hence the number of inmates has steadily increased and the asylum has had to be enlarged. The worst cases of mania come under treatment; the Indian people see no necessity for placing the harmless lunatic in confinement. Unfortunately the common use in the Punjab of hemp drugs causes a long list of dangerous and troublesome cases, but toxic mania of this kind is curable. The men are encouraged to work in the asylum gardens, where "shady, green, and even pleasant areas" have been made; all great festivals are observed, and forms of amusement, including the magic lantern and the gramophone, are provided; tobacco is allowed in reason; rewards are divided among steady workers; and even a vernacular paper is taken in. The inmates are, in fact, made more comfortable than in their own homes, where their condition is generally that of great misery and constant mechanical restraint. These remarks refer, of course, to the violent maniacs, the victims mostly of *charas* or *bhang*. The criminal lunatics are found useful as attendants, cooks, &c., and they are also employed on machines for making clothing, bedding, and matting. No distinction is drawn between them and the ordinary inmates, and many cures are effected. The female lunatics are more difficult to deal with, and, as in Western countries, they give far more anxiety than the males. They cannot be induced to work, and "the time of the majority is devoted largely to quarrelling with one another, and to an amount of vociferation, abuse, and energy of destruction that far surpasses anything ever seen among the men." The experiment has been tried of placing four Franciscan sisters in charge of the female asylum, and the greatest success has been gained. They have laboured from the first with devotion, kindness, and self-effacement, and their presence has utterly changed the conditions under which the lunatics live. We are glad to notice that the noble work which these sisters are doing is warmly acknowledged by the authorities. Generally it may be said that the insane in the Punjab are most carefully looked after once they have entered the Lahore Asylum, and popular opinion recognises the good which it is doing.

Retirement of Lieutenant-Colonel E. P. Frenchman, I.M.S.

In the course of a resolution of the Government on the prison administration of Burma for the year the following occurs:—

> By the retirement of Lieutenant-Colonel Frenchman the Government of Burma has lost the services of a most valuable officer. As Inspector-General of Prisons, his administration of the Jail Department was marked no less by economy than by efficiency, and he achieved notable results, especially as regards the health of the prison population. The department has suffered a further loss through the appointment of Major B. G. Singh as Inspector-General of Prisons in Eastern Bengal and Assam. Major Singh had administered Insein Jail with conspicuous success for nearly nine years.

The Prevention of Cholera in Bombay City.

In a memorandum recently circulated at the instance of the Bombay Chamber of Commerce attention has been drawn to the place which cholera occupies in the health returns of the city of Bombay, and the existence of the disease in Bombay is attributed very largely to the importation of cases from Nassik. Several recommendations have been made by the chamber to prevent the risk of the spread of the disease, the more important being the establishment of quarantine camps at Nassik for the accommodation of the pilgrims and the running of special trains for festivals whereby a closer examination of the passengers can be carried out. In its reply to this memorandum the Government of Bombay states that it considers that the establishment of quarantine camps would be impracticable, but it agrees that special trains should be run for the pilgrim traffic, and points out that the new water-supply should do much to eliminate cholera from Nassik.

The Treatment of Snake-bite by Permanganate of Potash.

In the course of certain experiments carried out recently at the Government bacteriological laboratory in Bombay to test the value of potassium permanganate as an antidote for snake poison, attempts were made to ascertain by experiments on animals whether potassium permanganate was harmless or otherwise when injected into the blood stream. The results of these experiments have, however, conclusively shown that intravenous administration of the drug is attended with grave danger, and that this method of treatment should on no account be employed. Both Sir Lauder Brunton and Major Leonard Rogers, I.M.S., had already condemned this method of treatment as useless and dangerous. Major Leonard Rogers, as a matter of fact, carried out experiments on animals some years ago as well as recently to test the value of intravenous injections of permanganate of potash and other oxidising agents, but did not think it worth while to publish his results owing to their negative value. Sir Lauder Brunton's method of local application of permanganate of potash to destroy the action of snake venom at the site of injection before it has had time to enter the general circulation is well known, and still remains the one method of treatment generally applicable which has in its favour both a scientific experimental basis and a record of remarkable success in practice.

BUDAPEST.

(FROM OUR OWN CORRESPONDENT.)

Hostile Criticisms on a Recent Appointment of a Professor in the University of Budapest.

OWING to the manner in which professors are appointed in Hungarian universities it often happens that the successful candidate is not the best qualified of the applicants for the vacancy. When a medical chair becomes vacant the medical faculty of the university in question submits the name of one of the candidates to the general board of the university for approval, but this board (which consists of mixed faculties) has the right to reject the candidate proposed by the faculty and to appoint another of its own choosing. Finally, the appointment has to be confirmed by the king through the Minister of Public Instruction. In the recent selection of a

professor to fill the vacant chair of dermatology in the University of Budapest the general board disregarded the recommendations of the medical faculty and succeeded in bringing about the appointment of another candidate under circumstances which have evoked an unusual amount of hostile criticism. Since the death of Professor Schwimmer in 1896 there has been no formally appointed professor of dermatology, but the work of the chair has been carried on by Dr. Lajos Nekam, who had for many years the position of a locum-tenent and eventually became a candidate for the professorship. Of the other candidates Dr. Török and Dr. Thomas Marschalkó, the latter of whom is professor of dermatology in the University of Kolozsvár, are by many considered to be of higher professional standing than Dr. Nekam. In the controversies arising out of this election it has been freely asserted that sectarian influences had no small share in determining the result, and for this reason it may be mentioned that Dr. Nekam and Professor Marschalkó are Roman Catholics, whereas Dr. Török does not profess that faith. The medical faculty, though recognising the scientific prominence of Dr. Török, who is by far the most famous dermatologist in Hungary, said that it regarded teaching ability as of more consequence than scientific attainment, and therefore recommended the appointment of Professor Marschalkó. There was, however, a small minority in favour of Dr. Nekam, and Count Zichy, Minister of Public Instruction, sent Dr. Nekam's name to the king for confirmation. This confirmation was realised on May 24th, and after an uncommonly long delay—namely, on June 22nd—his appointment was published in the official papers. A respresentative of the *Pesti Naplo* has interviewed Professor Marschalkó, who made the following statement: "Now that the appointment has received royal sanction there is nothing further to be done, but I may say that the proposals of a faculty have never been treated in a like manner before. It is not a personal affair, but one which strikes at the freedom of science." The same journalist interviewed Dr. Török, who maintained perfect silence as regards this matter, only remarking, with a smile, that from henceforth he would give up his energy to the culture of music. A similar visit was then made to Dr. Nekam, who, however, refused all oral explanation, but sent the interviewer a typewritten statement as follows: "Dr. Lajos Nekam graduated 21 years ago. He spent two years as demonstrator at the chemico-pathological laboratory, and two years as clerk at the hygienic laboratory; for three and a half years he was connected with a pathologico-anatomical laboratory, and for one year he held the second position in the bacteriological laboratory of Budapest. For three years he visited the best dermatological institutes of London, Paris, and Vienna, and since 1896 he has been acting as locum-tenent of the vacant dermatological chair in Budapest. He has written 73 lengthy and 64 shorter papers. He is corresponding member of the dermatological societies of Paris, Vienna, Amsterdam, and Montevideo. In arriving at its decision the University Board was influenced by 12 foreign dermatologists, whose opinion had been asked and who all supported Dr. Nekam." The *Pesti Naplo* remarks that this does not disarm criticism. Every well-educated man has travelled for the purpose of studying in foreign countries, and nobody denies that Dr. Nekam is a well-educated man. As for the 12 foreign dermatologists, the *Orvosok Lapja* (Medical Weekly) says that they gave favourable opinions regarding Dr. Nekam because the question was not put to them as a matter of a choice between him and others, but purely as a question of his general eligibility. It will be seen therefore that feeling has run very high, and may take time to subside.

July 20th.

NOTES FROM CHINA.

(FROM OUR OWN CORRESPONDENT.)

Two Pathogenic Plants.

PRIVET asthma and varnish eczema are two ailments not infrequently met with in China which are directly traceable to pathogenic properties in plants. I have recently met with cases of both complaints; they are acute enough to cause serious inconvenience and are worthy of note, as in the latter complaint especially medico-legal issues may be involved. Privet asthma is a form of summer catarrh, or hay asthma, due to the pollen dust of the privet plant, Ligustrum vulgare. In susceptible persons it produces an acute coryza, with frontal sinus pains and intermittent spasm of the glottis. The plant grows all over China. Cases of this ailment occur in Shanghai frequently enough to warrant a municipal health notice being annually published requesting people who possess privet plants to prune off the flower buds before they open out into full blossom. The local newspapers often record complaints about the privet pest. I may mention that in the treatment of asthma the Chinese have long known the efficacy of stramonium. A favourite prescription handed down for generations is made up by mixing together one drachm each of dried tubers of Arum pentaphyllum, realgar (As_2S_2), and stramonium, and adding a slice of ginger. These are ground together and smoked with inhalation. Instead of stramonium the dried leaves of artemisia are used with equal favour. In lacquer or varnish eczema the hands and the face are usually attacked. The skin becomes eczematous with serous vesicles here and there which develop into purulent bullæ. The inflammation may become so intense as to be erysipelatous. The best treatment is lot. plumbi c. opio. The cause is Ningpo varnish, the irritant effects being due to the presence of a volatile toxicodendric acid, hence the occasional occurrence of the poisoning without actual contact taking place. The varnish becomes innocuous when thoroughly dry and hard. In the last case of varnish eczema I saw, the patient, an engraver, had incurred the disease when travelling on a newly-built China coast steamer. He maintained that the acute eczematous condition of both his hands debarred him from taking up his work for several weeks and claimed damages from the steamship company, who admitted his claim and gave him adequate compensation. The poisonous plants involved in the causation of privet asthma and varnish eczema both belong to the Ligustrum family. In the former case it is Ligustrum vulgare, while in the latter it is Ligustrum glabrum or Rhus succedanea, the poison oak. The galls of this oak are employed in the Chinese pharmacopœia as being expectorant, astringent, and corrective.

The English Language in Chinese Colleges.

Foreign education is the foremost "craze" in China at present. Enlightenment is the cry of the day. In the opinion of many of China's foremost scholars the Chinese language, for etymological and structural reasons, has been found to be inadequate for the purpose of conveying modern scientific ideas, and until the arrival of the day when China can boast of a fairly complete system of scientific terminology it is, to quote a Chinese paper, "almost an impossible task for our students to pursue, without the means of some foreign language, the higher and more profound branches of Western learning." In the *Peking Official Gazette* there has appeared a memorial presented by the Ministry of Education which has received the Imperial approval. It is headed: "A Memorial presented by the Education Board on the question of accepting definitely the use of some foreign language for imparting instruction in technical and scientific subjects." After referring to the failure of the present system to give students in the higher branches instruction of any other than a superficial character, and to the way in which translations of foreign text-books lose much of the meaning and spirit of the originals, and to the lack of uniformity in the foreign language employed (different schools using French, German, English, or Japanese), the memorial, which assumes the form of Imperial Regulations, concludes thus: "In all provincial high schools (scientific and technical) already existing or established in the future the studies (with the exception of ethics, Chinese literature, and history) pertaining to science shall be taught in English. When the students are sent to Peking for their final examination, when they graduate, they shall be examined through the medium of the English language." Some missionary medical colleges have been endeavouring by means of the Medical Lexicon to which I have referred in previous notes to carry through a five years' course in the Chinese language. This has necessitated the invention of hundreds of new terms and characters, which the Chinese say has eventuated in it becoming an equally foreign language. There are two points, however, about it—viz., that it is, after all, a form of Chinese, and, secondly, that it can be made an efficient medium, as has been amply proved by the satisfactory way in which students of the Union Medical College, Peking, have taken up their education. But with regard to the official adoption of English, a most important step has been taken by the Board's memorial. It

will mean a largely increased demand for English medical and other scientific text-books, and in the future will call for more English lecturers for Chinese colleges.

Miscellaneous.

The ports of Amoy and Swatow have been declared as plague-infected by the Superintendent of Customs, Shanghai, and all vessels arriving therefrom are to be governed by the sanitary regulations of Shanghai and Woosung. Small-pox, which is always more or less in evidence in Peking, has lately broken out with more virulence than usual, and the Imperial University has had to be closed because of the number of students infected. Although vaccination is extensively practised it is non-compulsory and the lymph is of very varying mediocre quality. Despatches from Japan indicate that at this time of the year the country is by no means healthy. There has been an outbreak of typhoid fever at Tokyo, and plague, scarlet fever, and other infective diseases (unnamed) prevail in various places. In Mamgame a virulent form of scarlet fever is raging in the western part of Sanuki province, and over a hundred people have fallen victims to this disease. The death-rate is high, about 80 per cent. succumb.

June 20th.

Obituary.

GEORGE HERBERT ROWE, M.R.C.S. ENG., V.D.

BY the premature death, at the age of 53 years, of George Herbert Rowe Leeds has lost a citizen whose place it will be very difficult to fill.

The son of the late Rev. George Rowe, principal of the Diocesan Training College at York, he became a student at the Leeds School of Medicine in 1874, and in due course, after holding resident hospital posts at Wolverhampton, Leeds, Scarborough, and Worcester, he commenced practice in Leeds is association with his father-in-law, Mr. C. G. Wheelhouse. He was soon appointed a demonstrator of anatomy in the School of Medicine and held the post for seven years. In 1884 he was elected an honorary surgeon to the Leeds Public Dispensary, and at the time of his death he was the senior surgeon to that institution and one of the trustees of the freehold. He was also the visiting officer to the Cookridge Convalescent Home and held various other honorary appointments to smaller charities.

The service that he gave for the sake of the less fortunate amongst his professional brethren entitles him to particular gratitude. Associated for several years with Mr. Wheelhouse as joint secretary of the West Riding Medical Charitable Society, he eventually carried out all the secretarial duties, and on the death of Mr. Wheelhouse was elected treasurer. The work that devolved upon Rowe in connexion with this society was very great, and the debt which the medical profession of the county owe to the self-sacrificing labours of Mr. Wheelhouse and his son-in-law was often acknowledged, and is not in danger of being forgotten. Nor was his usefulness restricted to professional matters. He possessed certain gifts of character which were well known and led to him being asked to undertake the duties of warden of Lyddon Hall—the hall of residence for the University students. To those who knew Rowe it was easy to understand why the students under his charge respected and liked him, and why it was that under his administration the hostel flourished. His talent for organisation was further utilised by the University when he was appointed its honorary marshal.

Outside his profession Rowe had an interest which was very much more than a hobby. He was a Volunteer and a Territorial of the keenest type. He entered the York Rifles in 1872 and got his commission four years later. In 1883 he joined the Leeds Rifles as a captain and in due time rose to second in command. When the Territorial Force came into existence it was decided that a new battalion to the Rifles should be raised on the south side of the river Aire. This duty was entrusted to Colonel Rowe, to give him the title by which he was familiar to the general body of Leeds citizens. Many doubted the possibility of getting together sufficient men in that part of the city to constitute a separate battalion. But Rowe's enthusiasm proved equal to the occasion. Calling together meetings of the artisans employed in the engineering sheds and factories of South Leeds he spoke to them with an earnestness that kindled their zeal, and soon the 8th Battalion became an accomplished fact with Colonel Rowe in command. How successful the undertaking has proved may be gathered from the fact that the battalion has now attained its full strength of 1005. Rowe was also an active member of the Yorkshire Territorial Association and vice-chairman of the Finance Committee. Yet with all these duties and the claims of a good family practice he managed to find time to act as the honorary secretary of the Leeds Club.

In reviewing the work which Rowe accomplished in the 28½ years during which he was a citizen of Leeds it is impossible not to be struck by the variety and useful character of his interests. His life was one of hard work, and the hardness of it was perhaps not appreciated by those who only saw one of its several sides. He was never idle, and he was never known to take a holiday—an absence from home meaning with him simply a change from one set of duties to another. Duty and discipline were the keynotes of his character, and it would be difficult to over-estimate the value of his example upon the young men with whom he was associated at Lyddon Hall and in the officers' mess of his battalion. Such a strenuous life, combined as it was with high personal character and the outward characteristics of a thoroughly good fellow, is not one that could come to an end without leaving a big gap. Leeds is the poorer indeed for his death. Amongst his personal friends—and they were many, both in his own profession and outside it—his loss will be very keenly felt, whilst by his patients not only the doctor but the man will be mourned. He was buried on July 20th, by the desire of his fellow officers, with full military honours and in the presence of a large gathering of personal friends.

He leaves a widow and two sons—one a lieutenant in the Royal Garrison Artillery, fortunately at home on leave from Nigeria at the time of his father's illness, and the other a captain in the 3rd York and Lancaster Regiment.

MOYLE BRETON, M.R.C.S. ENG., L.R.C.P. LOND.,

SURGEON, R.N. (RETIRED).

ST. GEORGE'S men of the early "nineties" will hear with regret of the death of Moyle Breton in his forty-first year on July 16th, after a chronic illness which had necessitated his being invalided from the medical service of the navy some years ago. When at the hospital he was a distinguished athlete and excelled at putting the weight; he was also a champion pistol shot at Bisley. His long illness was most bravely and uncomplainingly borne by him.

BRUSSELS MEDICAL GRADUATES' ASSOCIATION.—The annual meeting and banquet will be held at the Brussels Exhibition on Saturday, August 6th, at 7.30. Tickets 10 francs (not including wine). A seventeen-day excursion return ticket viâ Dover and Ostend to Brussels by any train, including saloon on steamer, costs £2 8*s.* 4*d.* The agents are Messrs. Dean and Dawson, 84B, Piccadilly, W. The headquarters in Brussels during the meeting will be Wiltshire's Hotel, Boulevarde de Waterloo, where a book will be kept for the registration of members on their arrival. All foreign graduates are welcome. A party will leave London on Friday, August 5th, for Brussels, as has been announced, and many may like to take advantage of the fact that the International Congress of Legal Medicine will be going on in Brussels. For further information application may be made to Dr. Arthur Haydon, honorary secretary of the Brussels Medical Graduates' Association, 23, Henrietta-street, Cavendish-square, W.

INTERNATIONAL CONGRESS ON THE CARE OF THE INSANE.—This congress takes place at Berlin from Oct. 3rd to 7th next. The following have been nominated to serve as a committee for the United Kingdom to assist in arrangements for the Congress: Sir George O'Farrell, Dublin, and Dr. John Macpherson, Edinburgh (*ex-officio* as members of the Permanent Committee for International Congresses); Dr. W. Bevan-Lewis, Wakefield; Mr. M. J. Nolan, Downpatrick; Dr. R. Percy Smith, London; Dr. C. H. Bond, Epsom; Dr. W. R. Dawson, Finglas, Dublin; and Dr. J. H. Macdonald, Govan Asylum, Hawkhead, Paisley. Applications for membership of the Congress are to be addressed as early as possible to Herr Kalkulator Mietzner, 5, Prinz Albrechtstrasse, Berlin S W. The fee for membership is £1 (20 marks), and for a lady's ticket 10*s.* (10 marks).

THE BRITISH MEDICAL ASSOCIATION.

SEVENTY-EIGHTH ANNUAL MEETING IN LONDON.

THE meeting of the British Medical Association, which has taken place during this week in the metropolis, and the business of which is, of course, not concluded as we write these paragraphs, has been in every way a complete success. An enormous number of members have attended the meeting, and the scientific work in the sections, which have been well attended, has been of a high order. Really important matters, dealing with the internal and the external policy of the Association, have been closely debated at the representative meetings, and the organising talents of the officials, coupled with the splendid hospitality of the President, have combined to make the occasion a memorable one in the medical world.

The representative meetings were held in the chamber of the Court of Common Council in the Guildhall. The work of the sections and the official business was conducted in the buildings of the University of London at the Imperial Institute, the Imperial College of Science, and the old College of Science, South Kensington. The Imperial Institute, it will be remembered, was the headquarters of the meeting on the last occasion when it was held in the metropolis, under the presidency of the late Sir John Russell Reynolds.

In 1895, when the Association previously held its meetings in the Imperial Institute, that building, founded in 1887 as a memorial to Queen Victoria, was not connected with the University of London; indeed, it was not until 1906 that the Government took possession of the Institute and handed a large part of the buildings to the recently reconstituted University of London. In 1903 the Institute was transferred to the Board of Trade, and its first Bulletin, although, of course, dealing with commercial matters, contained much that was of medical interest, inasmuch as it included research work on the composition and therapeutical properties of certain plants. This work was in continuity with the original scheme of the Institute, which was designed to be a material exhibition of the progress and products of our empire. The Colonial Nursing Association made its home here, and in many other directions the spirit of the foundation has been maintained, so that, apart from its connexion with the University of London, the Imperial Institute has associations which entitle it to entertain a medical congress.

The number of sections this year is 21, that being the largest number of divisions of the scientific work which has as yet been attempted. All of them were accommodated in one of the four buildings which we have mentioned, and were in easy communication with each other—a matter of no small importance, as those who have attended congresses know. Although, for purposes of convenience, specialism, indicated by a partition of the work into 21 sub-heads, has now become necessary, a really progressive physician and surgeon knows that his interests do not necessarily lie in one, two, or three sections, but may well be spread over a much larger field. Where defects of accommodation have led to inconvenient separation of the work of the section debates have always lost in interest, a certain hurry and muddle being introduced into them by the local conditions. We report two or three sections at some length, but can only deal with the proceedings in the others very briefly in this issue.

The Annual Exhibition of drugs, surgical appliances, electrical apparatus, and special foods was held in the Imperial Institute Buildings (University of London). Situated just above the reception room and registration hall the space afforded to the exhibitors this year was in a prominent position and within easy reach of the visitors. The rooms were tastefully decorated and the stalls skilfully arranged, although in places the space above them was somewhat shallow. The variety of exhibits was great and visitors found it well worth their while to spend some of their time amongst the novelties shown by chemists, surgical instrument makers, food specialists, hospital appliances makers, and so forth. An interesting feature of the exhibition this year was a demonstration of electrical apparatus in a separate room—the Jehanghier Hall. In accordance with our practice on previous occasions, we commence in another column a notice of the more important exhibits.

A new plan in regard to pathological and other specimens has been organised this year. A Medical Museum has been formed, divided up into a number of sections, each under the care of an expert honorary curator, who has selected subjects to illustrate and has collected from all available sources specimens illustrating the interesting points capable of demonstration by means of exhibits. The result has been that the Medical Museum contains a large number of series of exhibits, and does not consist merely of a collection of miscellaneous items. By changing the name of the museum from pathological to medical, opportunity has been given and taken of including anæsthetic apparatus, engravings, prints, and other objects of medical interest. The honorary secretary of the Medical Museum, Mr. W. H. Armit, has received many congratulations on the successful results of his hard work.

The work of the Representative Meetings commenced as far back as Friday last, July 22nd, when delegates from many of the local divisions, as well as certain colonial members, met in the Council Chamber of the Guildhall, where they were welcomed on behalf of the Lord Mayor by Sir Horatio Davies. At the opening general meeting, which took place first, an announcement was read by Mr. Edmund Owen, chairman of the council, that His Majesty the King had telegraphed his gracious consent to the request that he should become patron of the Association. At the meeting of Representatives which followed, matters affecting the internal organisation of the Association were discussed. At the second representative meeting on Saturday an important pronouncement was made on the subject of athleticism in schools. This pronouncement, while laying stress on the value of regular bodily exercise for the schoolboy, emphasised the importance of all the pupils of any school being under the personal supervision of a medical authority; of every boy being examined medically upon entry; and further, of his being carefully observed during his school career, inasmuch as fitness for physical exertion did not necessarily depend upon his age or appearance. Medical examination was mentioned as being of particular value in regard to swimming, boxing, and rowing. On Monday the representative meeting discussed mainly the organisation which is suggested by the British Medical Association for a national public medical service in anticipation of the imminent introduction of a Government measure on these lines. The final session of the Representative Meetings took place on Tuesday, when the question of Poor-law reform was further debated, as well as a report dealing with the evidence given on behalf of the Association before the Departmental Committee on Coroners' Law. A special report on chloroform administration was also adopted.

On the evening of Monday Mr. Butlin, the President-elect, entertained at dinner at the Hotel Cecil some 400 medical men from all parts of the world, representing the profession in the United Kingdom, in the Colonies, and in many European countries and in America. The only speeches, save the loyal toasts, were a few words from Lord Ilkeston (Sir Walter Foster), inviting the company to drink the health of the President-elect, and a few words in reply from the host, in which he laid stress on the work done by Lord Ilkeston for the British Medical Association, and expressed his pleasure in knowing that the medical profession was now represented by him in the House of Lords.

At the commencement of the adjourned first general meeting at the Guildhall on Tuesday morning it was agreed that the next meeting of the Association should be held in Birmingham, and Dr. Robert Saundby, the professor of medicine in the University, was appointed President-elect. In the evening, at St. James's Hall, Great Portland-street, Mr. Butlin delivered the Presidential Address, which we publish elsewhere.

On Tuesday evening an "At Home" at 18, Cavendish-square, given by the President of the Section of Laryngology of the Royal Society of Medicine and Mrs. Dundas Grant was largely attended. The guests were entertained with vocal and instrumental music.

On Wednesday morning Dr. Mitchell Bruce delivered the Presidential Address in Medicine (see p. 284) at a general meeting. Later the staff of St. Bartholomew's Hospital gave a luncheon in the Great Hall of the hospital in honour of Mr. Butlin, their consulting surgeon, and President of the Association, extending invitations to many prominent members of the Association and distinguished foreigners now in London. Dr. Norman Moore, senior physician to the hospital, who presided, proposed Mr. Butlin's health in felicitous terms, pointing out his merits as a surgeon, and saying that, while he had made particular fields of surgery especially his own, he had always maintained a position as an authority on general surgery and pathology. Dr. Norman Moore added a tribute to Mr. Butlin's powers of work and concentrated industry, to which we have alluded elsewhere. Mr. Butlin, in a brief reply, discarded all reference to the personal compliments, and stated succinctly the power for good that the British Medical Association, when it had fully developed, would necessarily be for the protection of weaker members of the profession. To the toast of his health as chairman, Dr. Norman Moore pleaded that there was no time to say anything, because Mr. Butlin had to go immediately to the place where he (Dr. Norman Moore) had hoped he would not be wanted for some time yet—Westminster Abbey. Consequently, the luncheon broke up in laughter—a very suitable termination of a very pleasant function.

On the same afternoon the usual service was held at Westminster Abbey, at which the Dean of Salisbury preached before a large number of members. The collection was divided between the British Medical Benevolent Fund and Epsom College. At Westminster Cathedral seats were reserved at Solemn High Mass and at Vespers for Roman Catholic members.

On Thursday the Presidential Address in Surgery, which will be found in full on p. 289, was delivered by Mr. H. Gilbert Barling, Professor of Surgery in the University of Birmingham.

THE SECTIONS.

MEDICINE.

WEDNESDAY, JULY 27TH.

President, Dr. R. W. PHILIP (Edinburgh).

The PRESIDENT, in his introductory remarks, pointed out that the Section of Medicine occupied a more preponderating position in former times than it did at present. The growth of specialism and the advance of surgery have invaded the department of internal medicine, but so far from limiting its work these conditions had widened its horizon, and the outlook would in the future be improved. The general tendency would be to make medicine more scientific. It was significant that the discussions proposed before the section on this occasion concerned the meaning of groups of symptoms. The physician was not now content to wait for the completed processes, but concerned himself with the latent period of disease. His *metiér* was to detect and interpret the abnormal, and his attitude was daily becoming more one of prevention in regard to disease. He concluded by offering a hearty welcome to the distinguished guests present at the section.

Professor D. L. EDSALL (Philadelphia) opened the discussion on

The Pathogenesis, Prophylaxis, and Treatment of Acidosis.

He began by pointing out the new difficulties which had arisen in regard to this question, which seemed a few years ago to be easy to understand. This was due to the fact that recent research had tended to render even the fundamental questions matters of dispute. It was, however, definitely established that an acid intoxication can occur and produce definite symptoms, and, further, that the organism fights this by means of alkalies, especially by ammonia. It was established that in man an acid intoxication occurs in diabetes, and that this was dealt with by ammonia and other fixed alkalies. In the production of this intoxication it was the β-oxybutyric acid which played the predominant part, since diacetic acid was not present in sufficient quantity, and acetone was not powerful enough to be effective except in damaging the kidneys. The question was whether this acid intoxication was the whole cause of the symptoms. In many cases it might be, but it was probable that in some other factors were concerned. In regard to acidosis in other conditions, such as starvation, cyclical vomiting, and that occurring in association with certain diseases of the liver, different explanations were required, except in the case of starvation, which was essentially similar in nature to that in diabetes. This form was due to difficulty in utilising carbohydrates or to lack of them, and to disturbed fat metabolism. In acidosis due to other conditions the factor of diet may be concerned, but it plays a secondary rôle and at times has no influence. In these cases there was often quantitatively not enough acid to produce the symptoms, and he thought that the marked organic changes produced in the liver were the result of an autolysis of that organ increased by the acidosis, but produced or aggravated by other substances possibly formed in the intestinal tract. The result of the autolysis was to interfere with the metabolism of fats in such a way that oxidation was incomplete and acids were formed. He agreed with Bainbridge that there was no evidence in regard to any acid other than β-oxybutyric, which remained the only instance of a well-established auto-intoxication. In regard to the coma of diabetes, he did not think that carbonic acid was the cause, and in view of recent work regarding the importance of the fixed alkalies, especially calcium salts, for nerve tissues, further work was desirable in regard to the nervous symptoms. He pointed out certain analogies with the action of narcotics, which are said to flood the organism with fats. He then discussed the manner in which the large accumulation of acids occurred. The sequence was that owing to the lack of, or failure to utilise, carbohydrates there was a necessity for increased fat metabolism which became disordered, yielding fatty acids. It had been much discussed as to why oxybutyric acid accumulated in such large quantities, but some experiments by Neubauer had shown that diacetic acid given to animals may be transformed back to β-oxybutyric acid, and that the quantities of β-oxybutyric acid, diacetic acid, and acetone stand in a definite relation to one another. Some attempts made to control the acid production were then reviewed. These had been made in connexion with

fats, proteins, and certain derivatives from the carbohydrates. It had been shown that the lower fatty acids were more poisonous than the higher ones and that some proteins increased acidosis, whereas other lessened it. Alcohol had been shown to lessen acidosis, but if given in sufficient quantity to diabetics it was liable to act injuriously in other ways. Some recent observations had been made with glycerin-aldehyde and were encouraging, but were not yet conclusive.

Dr. E. I. SPRIGGS (London) maintained that the distinction proposed between the acidosis of diabetes and starvation and those forms of acidosis in disorders of the liver is an artificial one, and that there was no real difference between them. It was now established that the liver was of great importance in the metabolism of fat. In starvation and in diabetes a great strain was thrown upon fat metabolism, which entailed great strain upon the liver. Dr. Edsall had said that acidosis leads to autolysis, but he would point out that in diabetes, where β-oxybutyric acid was often present for months, autolysis did not occur. He suggested the action of some unknown toxin in this connexion. He pointed out that none of the other conditions had been investigated so exhaustively as diabetes and he reviewed the evidence that diabetic coma was due to acid intoxication, and indicated the cogent nature of this evidence. In the other conditions, where delirium and vomiting occurred instead of coma, the poisoning was acute instead of chronic, and this fact might account for the difference in its manifestations. He gave an account of some observations upon 25 cases of diabetes made in collaboration with Dr. A. P. Beddard and Dr. M. S. Pembrey. Acidosis in diabetes occurred in two ways: first, by the patient eating so much carbohydrate that he destroyed his limited power of dealing with it, with the result that strain was thrown upon fat metabolism; the second manner was by too rapid cutting off carbohydrate food in treatment. Some observations were recorded demonstrating the effect of too rapid change in diet in inducing acidosis. He urged that diabetics should not be kept in bed, and that no sudden interference with their habits should be made. He further insisted upon the importance of allowing the patient as much carbohydrate as he could assimilate.

Dr. LANGDON BROWN (London) maintained that starvation was the cause of the particular form of acidosis associated with β-oxybutyric acid. A patient given nothing but salines by the rectum rapidly developed β-oxybutyric acid, diacetic acid, and acetone. He pointed out that acidosis might occur in oxygen starvation, as in mountain sickness or dyspnœa or in broncho-pneumonia. He suggested that as sugars were either aldehydes or ketones they could combine with oxygen, and that in the absence of either factor acids were formed. Normally fats should be completely oxidised, but now and then metabolism stopped short at the fatty acid stage, and these for their excretion required ammonia or alkalies, and thus led to a drain of the proteins and salts. He thought that a vicious circle was established, the autolysis leading to acid production, and this to further autolysis. He agreed with Dr. Spriggs in opposition to Dr. Edsall that there was no difference between the two groups of acidosis. Some authorities had taken the high ammonia coefficient as an indication that the cases associated with disease of the liver formed a separate group, but Dr. Langdon Brown said this was due to a diminution of the amount of nitrogen, the ammonia remaining nearly the same. Acid intoxication occurred when the organism could not deal with the acids by means of ammonia or the alkalies. In regard to prophylaxis, the incapacity of diabetics to use carbohydrates was not equally marked, for some could utilise lævulose better than dextrose. In conditions other than diabetes dextrose should be given by the rectum. In the treatment of coma citrate of potassium was valuable as an adjunct to the alkalies. By comparison with the normal bases of urine, he suggested the use of the following proportions of salts for the alkaline treatment of coma: one drachm of bicarbonate of soda, half a drachm of citrate of potassium, and three grains each of calcium and magnesium carbonates.

Dr. A. P. BEDDARD (London) agreed that acidosis in general was always due to carbohydrate starvation of the tissues, and that diabetes was the only condition in which acidosis was shown to be dangerous to life. He referred to the effect of exercise upon diabetics, and confirmed the observations of Coats that in mild cases exercise increased the capacity of using carbohydrates, but in severe cases there was no increased utilisation, and even deterioration if the exercise were severe enough. On the other hand, too little exercise might be the cause of starting coma by diminishing the power of utilising carbohydrate to a minimum. He also discussed the use of alkalies in diagnosis and treatment. Normally 2 drachms of sodium bicarbonate were sufficient to render the urine alkaline for 24 hours, but in diabetics it might be necessary to give 3 ounces or more. This was not due, as had been suggested, to increased manufacture of acid induced by the alkali given, but to the neutralisation of the alkali by the abnormal amount of acid produced in the organism. He maintained that diabetic coma was the result of prolonged and increasing acidosis. He gave evidence to disprove the view formerly put forward that it was due to a carbonic acid narcosis, and demonstrated that there was actually less carbonic acid in the organism, owing to the increased ventilation of the lungs produced by acidosis, and that this reduction was a serious matter for the organism.

Dr. LEONARD G. GUTHRIE (London) agreed with Dr. Edsall that the question of acidosis had passed out of the hands of the clinician into those of the physiologist. He referred to some of the features of post-anæsthetic intoxication or delayed choloroform poisoning. He discussed the part played by the anæsthetic in its production, and did not believe it was due to too much chloroform having been given or to too great concentration. He also thought too much had been made of starvation as a factor in producing these effects. He inquired into their relation to cases of cyclical or periodic vomiting, and he believed that these cases were potential victims of delayed chloroform poisoning.

Dr. M. S. PEMBREY (London) maintained that practitioners were very liable to forget the general law of excitation, which afforded a ready explanation of the effects of sudden change of diet or exercise. This law taught us that a sudden stimulation produced more effect than a larger one extended over a longer time. He pointed out that exercise produced a physiological acidosis in the formation of lactic acid, and further that carbonic acid was not a useless waste substance but an important stimulant to the respiratory centre. In regard to anæsthetics, the effect was suddenly to reduce metabolism to a more profound degree than in sleep, and consequently if the liver were already overworked there might be an acidosis as a result.

Mr. J. H. RYFFEL (London) described the effects of violent exercise in producing all the symptoms of marked acidosis, and this was due to lactic acid, which could be shown to increase in the blood and urine. Violent exercise increased the acids of urine, the relative quantity of ammonia, the acids of the blood, and also increased respiration. In violent exercise an acidosis very similar to that of diabetic coma occurred, but it was only short in duration. His results confirmed those of Dr. Beddard, Dr. Spriggs, and Dr. Pembrey that coma was not a narcosis by carbon dioxide but was a direct result of the acids in the blood.

Dr. EDSALL, in reply, pointed out, in justification of his division of the cases into two groups, that acidosis might occur in cases in association with absolutely normal dietetic conditions. He believed that something excited a pathological degree of autolysis, and that acids increased it. He agreed that acidosis was the chief factor in diabetic coma, but not that it was the only factor.

Dr. LEONARD E. HILL (Loughton) gave a demonstration on

Improved Methods of Giving Oxygen.

He first showed that an increase in the percentage of carbon dioxide breathed led to deeper respirations, and since an amount of carbon dioxide up to 2 or 3 per cent. had been shown to be quite harmless he suggested that breathing air containing excess of this substance might be used practically to expand the lungs in disease. He had demonstrated that it was not the percentage of carbon dioxide which caused symptoms of distress in stuffy rooms, but the heat and moisture. He believed that keeping the air in movement by means of a fan or punkah was useful. He then showed a simple and ingenious apparatus for the generation of oxygen from sodium peroxide to be used in the treatment of mountain sickness or for the rapid preparation of oxygen when required during anæsthesia. He also maintained that the ordinary method of giving oxygen was of very little value and showed a simple and effective mask, by means of which

the percentage of oxygen in the alveolar air can be raised to 70 per cent. instead of the ordinary 14 or 15 per cent. Another apparatus was designed to avoid the wasteful method at present used, and he also described a method of giving oxygen continuously by means of a special chamber in which the patient's bed could be placed. Lastly, he showed an improved apparatus for rescue work in mines, by which a supply of oxygen sufficient to last for four hours could be carried, and yet allow the wearer to work hard with his arms.

SURGERY.

WEDNESDAY, JULY 27TH.

President, Sir VICTOR HORSLEY (London).

The PRESIDENT spoke a few words of welcome, and then called upon

Mr. ARBUTHNOT LANE (London) to open a discussion on

The Operative Treatment of Simple Fractures.

He said: "The subject is a very simple one. We have to determine whether the treatment of simple fractures by manipulation, splints, massage, and active and passive movements is satisfactory in securing a useful limb, or whether it is advisable to obtain accurate apposition of fragments and a restoration of the skeleton to its normal form and functions by operative measures. Personally, I am convinced that in the very large majority of cases of simple fracture of the long bones a perfect result can be obtained by operative treatment alone. However much the bulk of the profession may oppose the operative treatment of simple fractures, the growing demand for a more efficient treatment than the present one will oblige surgeons to improve their technique in this branch of surgery. That the operative treatment of simple fractures has been opposed so virulently and for so long is merely an evidence of the intense conservatism of our profession, and of the great difficulty it experiences in discarding its creeds in the face of proved facts. However, the facts supported by the growing intelligence and experience of the general public, assisted by radiography and the action of the courts of law, have driven the profession to reconsider their position and to wonder whether, after all, the beliefs on which they have based their practice up to the present, to the detriment of their patients, are any longer deserving of credence. I will first call your attention to the supposed possibility of effecting accurate apposition of fragments and the restoration of a broken bone to its original form by means other than operative. That this should be done has been accepted as a portion of the surgical creed up till quite recently. For instance, the late Mr. Christopher Heath wrote in THE LANCET of Jan. 4th, 1896, the following: 'I would remind you how important it is, in fracture of the leg particularly, that the fracture should be set thoroughly and accurately. ..... Unless that is done, and done accurately, the surgeon has not treated the case properly.' I cannot urge the truth of this teaching too strongly upon you. But as to the possibility of effecting such accurate apposition by the methods usually employed, there is now no doubt whatever that the principle was not, and never has been, carried out in practice. In fractures of the shafts of the long bones where there exists any considerable displacement of the fragments it is almost always impossible to restore the broken bone or bones to their original form by manipulation. If anyone would still wish us to believe that he is able to obtain accurate apposition by such means let him produce X ray photographs of his cases. That the inability to obtain accurate apposition of fragments is now fairly generally recognised is shown by the fact that the opponents of the operative treatment of fractures have changed their ground. They now assert that the functional result does not depend on the perfection of the restoration of the form of the skeleton but upon causes which they do not clearly define. These surgeons seem to have a very vague idea of the mechanics of the skeleton. They experience a great difficulty in arriving at a correct conclusion as to the amount of benefit their own cases derive from the treatment they themselves have employed. The same difficulty does not always exist when they are considering the results of the treatment of others." Mr. Lane here commented upon what he considered to be the opposing conclusions arrived at by two distinguished surgeons of the same school as to the amount of disability produced by fractures, and continued: "I have no hesitation in repeating a statement contained in a paper I read before the Clinical Society in 1894 in which I urged on the profession the folly of continuing the old methods of treatment and the necessity of having recourse to operative interference—namely, 'That the treatment of fractures, as it exists, is a disgrace to surgical practice, because those who have sustained fractures, especially of the leg, only too often experience enormous physical disability. When dependent on labour for their income, they frequently suffer great financial depreciation in their wage-earning capacity. In not a small proportion the depreciation in certain occupations amounts to 100 per cent.' All my subsequent experience of fractures, treated by means other than operative, has fully borne out the accuracy of the conclusions I arrived at many years ago. The advent of X rays has compelled surgeons to be more careful of their statements as to the necessity of effecting accurate apposition of fragments, and the temptation to cast discredit on the interpretation of X rays became too great to be resisted by the surgeon. If these surgeons could have shown that the nature and amount of displacement of fragments were exaggerated by X rays, then they would have believed that they had succeeded in propping up a creed which was rapidly slipping away. Now, as far as X rays are concerned, when taken by competent operators on up-to-date apparatus the results are, in my experience, perfectly intelligible and give a thoroughly reliable indication of the displacement of the fragments. Far from exaggerating the difficulties of replacement, they often under-estimate them very greatly, since they do not afford any evidence of the soft parts which intervene between fragments and oppose their replacement. I would therefore assume that the X ray photographs, taken in planes crossing each other at right angles by an efficient X ray expert with an up-to-date apparatus, afford sufficiently accurate evidence of the displacement for the purposes of the surgeon, and also that the same amount of information cannot be obtained by any manipulation of the surgeon, however experienced and skilful. The advantages gained by operative interference are that the broken bone is restored to its original form and is capable of performing its normal functions. However opponents of the method may argue and attempt to obscure the clear issue before us, there is no doubt whatever that if the operation could be performed easily and safely by an average surgeon the operative treatment of fractures would have become popular long ago. The difficulties that beset the operative treatment of fractures are that to ensure success an asepsis which is much more perfect than suffices for other operations is requisite. If infection of the wound takes place the result may be disastrous to the patient. Many of the operations are difficult to perform, especially when there is much comminution of bone and swelling of the surrounding soft parts, and unless very great care is taken a failure to secure perfect asepsis may arise during the course of a prolonged and complicated procedure. Till this is generally recognised by surgeons much harm will result from the general use of the operative treatment of fractures, but with an improved technique and an increasing familiarity with the operative procedure the danger of sepsis will cease to exist. As to the best method of retaining the fragments of broken bones immoveably in position, the buried steel plate is, in my opinion, the most effective and simple of application. A plate is readily secured to the fragments by screws, which in the adult engage the proximal compact tissue alone. These are threaded along their entire length. If properly introduced they produce no irritation in an aseptic wound. The skin of the patient should be carefully excluded from the wound area by means of sterile cloths fixed to the margins of the incision. The incision should be of ample length so as to avoid damage to important structures and to minimise any risk of infection. The instruments used for bringing the fragments into position for the introduction of the plates and screws, for controlling hæmorrhage, &c., should be very long and powerful. No ligatures are required and no portion of the instrument, sponges, &c., which have touched even the gloved hand shall come into contact with the wound. By these means these operations can be performed without any risk of infection or of danger to the life of the individual as far as the operation is concerned. An epiphysis if separated rarely requires to be retained in

position by a plate and screws, but should it be necessary to employ such means the plate should be removed as soon as union has taken place to avoid any interference with the growth of bone at the epiphyseal line. In fractures of the ends of long bones it is also rarely requisite to retain the fragments by means of a plate once accurate apposition has been effected, providing the joint be fixed in a suitable position. What are the limits of the operation? It is obviously no use to attempt to retain fragments of broken bones in apposition by any such mechanism as a wire or screw if the texture of the fragment is such that it would not hold. Therefore in the scrunch fractures of the lower end of the tibia and fibula in feeble old people and in alcoholics, or of the intracapsular fractures of the neck of the femur where no hold can be obtained, any attempt to use these means may be useless or worse than useless. The same applies to the rachitic child in whom the bones are still soft, and in whose bones the screws can obtain no efficient hold. One must always remember that whatever means are used it is absolutely requisite to immobilise the fragments. Otherwise, as a matter of course, the condition called rarefying osteitis will take place about the screw or wire perforating the bone. Also it is necessary to so bend the steel plate that it will lie accurately on the bone and will not be separated by an interval. The inaccurate adaptation of the plate to the surface of the bone must necessitate a constant strain on the screws which bend it and force it to assume the outline of the bone to which it is attached."

Dr. LUCAS-CHAMPIONNIÈRE (Paris) commenced by praising Mr. Lane's paper. He said that all that could be advanced in favour of the operative treatment of simple fractures had been brought forward by Mr. Lane, but he was unable to agree with the utility or necessity of employing the method in all cases. He allowed that it might be an excellent method when practised by such a surgeon as Mr. Lane, but he did not consider it suitable for general use. On the whole, he was satisfied with other methods of treatment for nearly all fractures, though he acknowledged that in some cases operation might be advisable. It was not sufficiently recognised that function does not always depend on anatomical regularity of the bone. Perfect function may exist, though the skiagram may show that perfect apposition has not been obtained. Operation was suitable for cases with much displacement, when manipulation could not place the fragments in a good position, as in some fractures in the lower part of the leg. When attention was paid to other points such as position, a very small amount of apparatus was needed for the maintenance of the fragments in the position they should be. He found it difficult to understand that it was ever necessary to operate on a fractured clavicle. The risk to life also must not be forgotten, for a simple fracture could not justify an operation which might prove fatal.

Mr. GILBERT BARLING (Birmingham) found it difficult to reconcile the two widely divergent views which were held at the present time as to the best treatment of fractures. Some claimed that by non-operative methods it was possible to obtain a very high percentage of perfect results, while others maintained that, after an ordinary fracture treated by splints, there was a depreciation of the utility of the limb ranging from 30 per cent. to 100 per cent. He suggested that a committee should be formed to investigate the matter. If a simple fracture were treated by conservative methods there was a risk that the function and utility of the limb might not be perfect; but, on the other hand, the risk of the operation must be taken into consideration. He by no means condemned operation entirely, but he thought that operation should only be employed in carefully selected cases, and he would venture to say that the careful selection of the surgeon was also necessary. The introduction of radiography had caused surgeons to reconsider many of their diagnoses, and the text-book statements of the signs and symptoms associated with certain fractures were often found to be incorrect when tested by skiagrams. And this was especially true in fractures in the neighbourhood of joints. On the other hand, the X rays were not infallible, and he described a case in which the skiagram showed no trace of a fracture, though the subsequent shortening of an inch and a half proved conclusively that the neck of the femur had been broken. The only true test of the satisfactory results of the treatment of the fracture was the utility of the limb. The fractures that he considered to be most suitable for operation were those of the olecranon, patella, the upper part of the femur, and oblique fractures of the leg. He thought it essential that those who had to operate for fractures of bone should employ Mr. Lane's apparatus. If a fracture required operation six or eight weeks after the injury, that in itself would be a proof that an error of judgment had been committed. The fracture should have been operated upon soon after the injury.

Mr. E. DEANESLY (Wolverhampton) agreed that the question whether the normal position could be restored after a fracture, without any operation, had been settled. Radiograms showed that in every case there was some deformity. It was a question whether it was necessary to have perfect apposition of the fragments, and it could not be denied that in some cases perfect function followed, even though perfect apposition was not attained. In the middle of the femur a fracture could be treated without operation with perfect functional results. He confessed that many of the results from non-operative treatment were not worthy of modern surgery, and he agreed that operation should be employed much more freely than was the rule at present. Fractures about the elbow and the upper end of the humerus, and also of the lower part of the leg, would give much better results if treated by operation. The risk in operation was not nowadays a risk of death, but the risk of a long lasting sepsis.

Professor CHARLES WILLEMS (Ghent) expressed himself as a warm advocate of the bloodless method of treatment of simple fractures in the majority of cases, but the best results could only be obtained if the surgeon took the trouble to make himself acquainted with the mode of application of splints and bandages. There were, he believed, three classes of cases in which it was desirable to resort to operative measures for the treatment of simple fractures: (1) cases where it was impossible to reduce the fracture; (2) cases in which vicious union had occurred; and (3) cases in which a joint was involved, or in which the fracture was just outside a joint. He was in favour in these cases of employing the open method, but after he had replaced the fragments in their normal position he did not employ any plate or wire. As soon as reduction was obtained he closed the wound, except for a small part in the middle, and then he applied a plaster-of-Paris roller bandage, and when the joints were fully fixed he closed the wound and completed the bandage. The correct application of the bloodless method required that the splints should be moulded to the limb, and no cotton wool should be placed beneath the splint, as this by shrinking made the splint too loose.

Mr. W. G. SPENCER (London) claimed that some of the cases of which skiagrams had been shown by Mr. Lane could have been certainly and efficiently treated without any operation. Fractures of the shaft of the femur could always be brought into good position if extension were rightly employed, and to obtain this it was sometimes necessary to increase the weight of the extension up to 30 pounds. Position also was of importance; in some cases of fracture of the leg division of the tendo Achillis was necessary to obtain the best results.

Mr. R. H. A. WHITELOCKE (Oxford) was in favour of operation for simple fracture in certain cases, as when the patella and the olecranon were involved. He held that rarefying osteitis might occur when wiring or plates had been used two or three years after operation, and he did not doubt that plates near the ends of the long bones in children might need removal as they interfered with the growth of the epiphyses. Catgut was, in his opinion, very useful for fastening fragments of bone together, especially where there was no tension, and it had never given him any trouble. It seemed to him that it was wiser to use a material which, being absorbable, would be much less likely to do harm than plates or wires.

Mr. H. J. PATERSON (London) maintained that the decision of the question depended on two points. First, what were the results of the treatment of fractures without operation; and, secondly, what is the risk to the patient in the operative treatment of fractures. He held that in the past too little attention had been paid to the distant results, and surgeons were often satisfied if a patient had only a small amount of shortening and not very great limitation of movement. The only satisfactory test of the success of the treatment of a fracture was the restoration to the patient of his full

working capacity. The use of the skiagram in legal cases made it emphatically imperative that a restoration to anatomical perfection was nowadays necessary. The treatment of fractures of both bones of the forearm without operation was very unsatisfactory. He had collected a series of cases, and in not one of them had there been complete pronation and supination. In one point the X rays failed to give information; they did not indicate when a portion of muscle lay between the ends of broken bone. As to the risk of operation, there was none if the operation were performed as it should be. It must be remembered that it was not an emergency operation, and therefore the fullest precautions could be taken to ensure asepsis.

Dr. C. J. MORTON (London) acknowledged that skiagrams if improperly taken might give a wrong impression, but if care were taken the skiagram would be absolutely trustworthy. He exhibited a number of lantern slides showing conditions which had resulted from the non-operative treatment of fractures; some of these showed wide separation of the fragments; in others, rotation and angular displacement had occurred, so that great functional impairment must certainly have taken place. He maintained that he was able to determine from an examination of the skiagram the degree of functional utility which was present in a case.

Mr. E. W. H. SHENTON (London) said that too little attention was paid to the ultimate results of the treatment, and he considered that absolute replacement of the fragments of the broken bone was the first essential for functional integrity. By external manipulation it was hardly ever possible to replace the fragments in their former positions. So far as his experience went, rarefying osteitis did not follow the use of plates, and there was no way more effective of recognising rarefaction of a bone than the use of X rays.

Dr. E. W. H. GROVES (Bristol) expressed his surprise that the lower jaw had not been mentioned as one of those likely to require the use of plates or wiring in simple fractures, and he had found that plates were of great value and more useful than wire for fractures of the lower jaw. For fractures of the long bones he had employed bone pegs. These varied in size; one was taken suitable for the medullary cavity of the broken bone, and half of it was placed in the medullary cavity of one fragment and half in the medullary cavity of the other, so that all angular displacement was prevented. The method was very easy. He also wished to draw attention to the value for the application of extension afforded by the transfixion of the bone with a steel pin, for direct traction could be made on the bone itself.

Mr. A. FULLERTON (Belfast) considered that some of the lack of success obtained in the non-operative treatment of fractures was due to the fact that most hospital surgeons took very little interest in fractures. He was not satisfied with the results of the ordinary methods, but he did not consider that they should be condemned wholesale. In certain fractures operation was required, as in transverse fracture of the upper part of the humerus, for by no method of splinting was it possible to obtain satisfactory results. The results after operation were good. The ordinary treatment of fractured clavicle was unsatisfactory, but he had not yet operated on any case. Fractures of one or both bones of the forearm were very unsatisfactory unless an operation were performed and screws and plates were employed. In fractures of the metacarpal bones also he thought operative measures were desirable. As to the risks of operation for simple fracture, he did not think they were quite so small as some of the speakers had seemed to imply.

Mr. C. H. FAGGE (London) held that the main indication for operation in simple fracture was inability to restore and maintain the fragments in apposition. The surgeon should aim at perfect functional results, and it was all-important that it should be recognised that the best results can be obtained by operation. Further, letting out the blood clot from beneath the periosteum avoids the formation of external callus. The technique of the operation was important, and the most complete asepsis must be maintained. In certain cases after the surgeon had been able, through the incision, to replace the fragments in their proper positions it was enough merely to maintain the bone in the right position without employing any foreign body to keep the fragments together. He had never seen rarefying osteitis follow the use of plates, and he had never had to remove plates or screws in any case of simple fracture. He also said that he had never seen either in Mr. Lane's practice or in his own any death after operation for simple fracture.

Mr. A. S. BARLING (Lancaster) pointed out that if we assume that the patient is in good health and able to stand the operation, and if it is impossible without operation completely to replace the broken bone, and if, further, the patient has to earn his own living, the surgeon would be justified in advising a county court judge that the pay of a workman who would not submit himself to operation should be stopped. He put the case as a question.

Mr. A. HEYGATE VERNON (Bournemouth) held that operation should certainly be employed when it was impossible without it to get the fragments into perfect apposition. The essential point to obtain good results in these operations was the most perfect asepsis.

Mr. J. CRAWFORD RENTON (Glasgow) spoke strongly in favour of operation for simple fracture, and he praised the instruments which Mr. Lane had invented. He, however, pointed out that it was not every simple fracture which required operation.

Mr. G. M. HUGGINS (Berkhamsted) claimed that plates never come away if they have been placed in position by competent surgeons. He laid stress on the importance of not employing chemical antiseptics in the wound, and he pointed out that if plating be employed external callus does not follow.

Sir VICTOR HORSLEY, before calling upon Mr. Lane to reply, declared himself to be a humble follower of Mr. Lane. In the setting of the fracture he considered the surgeon should not be satisfied until he had obtained perfect alignment. He approved of the suggestion made by Mr. Gilbert Barling that a resolution should be brought before the Section of Surgery affirming the desirability of appointing a commission for the investigation of the best method of treating simple fractures, and he promised to arrange that the resolution should come before the section on Friday.

Mr. LANE, in reply, said that this was the first meeting at which he had spoken on the operative treatment of fractures when he had found anyone willing to support his views. Some of those who opposed him had declared that though they objected to the use of plates and screws in simple fractures they approved of them being used in compound fractures, but he was totally opposed to the use of plates and screws in a wound that was probably septic, for it would almost certainly lead to the ultimate extrusion of the screw.

MEDICAL SOCIOLOGY.

WEDNESDAY, JULY 27TH.

President, Dr. JAMES ALEXANDER MACDONALD (Taunton).

The PRESIDENT, in opening the proceedings, referred to the fact that this was the first year in which a special section was allotted to medical sociology. A few years ago such a subject would not have been thought of in connexion with an association devoted to the consideration of medicine and its allied sciences. Of late, however, the State had come to take so much interest in medicine, and the connexion of the profession with various forms of work carried out by the State had become so intimate, that it was felt that there was need for securing an open discussion between the medical profession and those members of the public who were interested in such questions, and the speaker hoped that this new section would furnish a common platform for this purpose. It was not very easy to define what was meant by medical sociology, and he was informed that the Sociological Society, which had existed now for several years in London, had not yet arrived at a definition of the term sociology. However, his informant, Dr. Lauriston Shaw, had subsequently suggested to him what he (the speaker) regarded as a very good substitute for a definition by saying that medical sociology means the subjects which you will discuss in the section.

Professor BENJAMIN MOORE (Liverpool) then opened a discussion on

The Economic Basis of Hospital Management.

He began by pointing out that hospitals were originally institutions for the relief of the indigent sick, and indicated that traces of their monastic origin still existed to-day as they did in the case of schools and universities. Modern conditions, however, had made such a conception of the

functions of a hospital quite out of date. A hospital ought now to be regarded from the point of view of economics as an institution for the study of disease and for the advance of its treatment, and hence as existing for the benefit of the community or the State rather than primarily for the good of the individual. The conception of a hospital as a voluntary charity produced the evil of two distinct types of institution —namely, the Poor-law and the voluntary hospital—existing for two kinds of necessitous people, whereas there should be but one type of hospital. As a result of the operation of this state of things there has arisen the view in the lay mind that while it was a disgrace to be treated in a Poor-law infirmary, attendance at a voluntary hospital was no evidence of poverty, and was even permissible as a right which could be claimed by anyone. This placing of the hospitals on the charitable basis was now seen to be impossible, owing to the insufficiency of the available funds, and owing also to a sense of the unfair distribution of the burden of expense. An attempt should be made to place all hospitals on a common basis and to insist that admission, except to accidents, should only be allowed upon a doctor's certificate that the case could be best treated in a hospital. People possessing means, who had been admitted to a hospital on the grounds indicated, should be compelled to pay, and the fees should be made over to those giving them attention or to those who had sent them in. The view which regarded the doctor in the hospital as a philanthropist should be discouraged, the present system of paying back consultants in *kudos* or by introductions to practitioners should be abandoned, and hospital physicians and surgeons should be properly paid for their work like any other body of public servants. The method of appointment to such hospitals was also radically vicious, not only by reason of the importance given to canvassing and to interest, but also because, owing to the absence of any coördinated system, there was no means of securing promotion and transfer from one hospital to another and from one city to another. Moreover, the system of voluntary hospitals was a failure, because these institutions undertook a great deal of work which should not be done in hospital at all, and left undone a great deal of work that ought to be done, and they also wasted an inordinate amount of the time of workers attending the out-patients' departments. The system of Poor-law hospitals was also a failure: first, because of the taint of the Poor-law; secondly, because the attention to patients was inadequate, and must be so long as the resident officers were sweated at their work and compelled to undertake the charge of a number of beds that no single individual could properly attend to, so that a great deal of truly medical work was performed by nurses instead of by medical men who were alone competent to do it; and thirdly, because many of these hospitals were antiquated, insanitary, and overcrowded. What was needed was a properly organised, adequate modern service of State hospitals in which all cases should be properly attended to by properly qualified and adequately paid medical officers. The reason for such a system was not charity or philanthropy but purely and simply the economic demand for a healthy people. Since all medical service would be paid for under such a system, either by the State or by the individual, the doctor did not suffer, he was able to carry out his work under better economic and social conditions, and the public had an infinitely better service. It was further obvious that hospital abuse was impossible, for the profession itself would work the system, and lay committees and charitable donors, with their well-meant but unscientific interference, would cease to exist. The present chaotic condition could not last, and it would be found that the only system to replace it would be a unified system with proper payment for services rendered.

Sir HENRY BURDETT, K.C.B. (London) expressed his general agreement with the criticisms of the existing system as set out in the synopsis of Professor Moore's address. He was old enough to remember the time when the chief anxiety of the patient was to keep out of hospital, whereas now everyone wanted to be operated on, and it was the natural wish of the fond mother that her boy should have his appendix removed in infancy lest its presence should inconvenience him later. This readiness to have recourse to hospitals was leading to much serious abuse by persons well able to pay for medical treatment. Everyone knew that such abuse existed, and he had been assured by hospital physicians that under present conditions it was inevitable that cases of clinical interest would be admitted to gratuitous treatment irrespective of their social position. Moreover, ticket cases had precedence over other cases which from a medical point of view might have more pressing claims for admission. An extension of the present system would make the existence of the private practitioner impossible. While the speaker would be disposed to criticise some of the details of Professor Moore's paper, he believed that a coördinated hospital system was needed, that the need was urgent, and that the conditions for securing such a reform were very favourable in view of the reports of the Poor-law Commission and the avowed intention of the Government to establish a system of sick insurance. It would be necessary to utilise all the existing Poor-law and voluntary hospitals and nursing homes, and to organise them into one system whereby institutions would provide separate accommodation in a series of pavilions adapted for the several classes of patients, the categories being defined by the proportion of the cost of their medical treatment that they could contribute. By bringing together into one governing body all those responsible for applying medical relief we should secure the minimum of expense and the maximum of efficiency. He believed that the solution of this question in the spirit of wise compromise was very much nearer than was generally supposed.

Dr. G. A. HERON (London) described a hospital nowadays as an institution into which anyone might go and get treatment free of cost, provided that he was not detected while in the hospital as a person of means; it was so, at all events, in the large cities. He suggested that some hospital which was really in earnest in desiring to prevent abuse should proceed against a patient getting treatment in this fashion under false pretences.

Dr. L. S. LUCKHAM (Salisbury) remarked that the Royal Free Hospital had tried this recently, and that the case was dismissed by the magistrate.

Dr. HERON, continuing, pointed out that the idea of preventing abuse by the inquiries of almoners was illusory. The task assigned to the almoner could only be carried out by officials giving their whole time to the work and quite independent, and these conditions were obviously unattainable. What was needed was to get all the best brains with knowledge of this matter together and to devise a coördinated system.

Dr. D. J. MACINTOSH (Glasgow) referred to the need of considering the differences in local conditions. The tendency to municipalise medical treatment threatened the interest of the general practitioner, and it was desirable not to rush too quickly into schemes of the kind suggested. Hospital abuse was not in his experience very serious in Scotland. It would be entirely prevented by making hospital treatment conditional on the recommendation of the regular medical attendant.

Mr. KERSHAW (London), speaking as a hospital secretary, remarked that his efforts to enlist the medical practitioners in the prevention of abuse by writing to them when their patients came to hospital for treatment had met with very little response. He thought that a distinction should be made between the general and the special hospitals, the latter being those which could most usefully supplement the work of the general practitioner. We are near the time, he thought, when the Government will take over the hospitals of this country, and will recognise that the health of the individual ought to be the concern of the State.

Professor ROBERT SAUNDBY (Birmingham) dealt specially with the question of the mode of admission to hospitals. A modification of the ticket system worked well in the hospital with which he was connected, while in another institution the adoption of the registration fee had proved very injurious. The latter system was used, he considered, in some small special hospitals in a manner that allowed practical advertisement for patients. In his experience doctors very often recommended patients for hospital treatment who from the social point of view were quite unfit objects for care in a charitable institution. He deprecated the suggestion that hospitals should be free to everyone, and he was doubtful of the feasibility of some of the far-reaching proposals brought forward at the meeting.

Dr. H. R. KER (London) desired to put the matter from

the point of view of the general practitioner. He advocated the system of making hospital practice purely consultative, patients being seen only when provided with a certificate from their regular attendant, except, of course, in the case of accidents.

Dr. R. C. BUIST (Dundee) thought the whole question should be viewed from the national standpoint. Hospitals were educational, and the burden of educating the medical profession should rest on the State.

Dr. MAJOR GREENWOOD (London) was opposed to the municipalisation of hospitals, which would place on the ratepayers burdens which charitable people were ready to bear. While heartily agreeing as to the need of a co-ordinated system, he deprecated the abolition of voluntary hospitals. The cessation of all eleemosynary work by the profession would lower it in the eyes of the public. The suggested extension of hospital treatment to all classes would be destructive to the general practitioner.

Dr. LUCKHAM advocated a system of subscribers' letters endorsed by the medical attendant and further scrutinised by an almoner.

Professor J. T. J. MORRISON (Birmingham) was strongly in favour of the large reforms outlined by Professor Moore and Sir Henry Burdett, but did not altogether share their optimistic views as to the early advent of the new era.

Dr. LAURISTON SHAW (London) pointed out that the hospital system did not presuppose a charitable basis. Hospitals existed to promote efficiency and economy. The direction of reform should be to leave the ordinary care of the sick to the general practitioner, and to allow charitable institutions to provide only the more advanced and more special treatment. For this purpose hospital treatment should be organised on consultative lines.

STATE MEDICINE.

WEDNESDAY, JULY 27TH.

President, the Right Honourable Lord ILKESTON (London).

The PRESIDENT in opening the proceedings, referred to the extreme gravity of the subjects which the section had to discuss. For years past prominent and influential members of the British Medical Association had been sowing the seeds of social reform, and no body of men were more capable of giving advice to Parliament on questions of such reform, for they spent their lives amongst those for whom reform was most urgently needed, and must thus learn more of the social needs of these people than any other class of persons. They had been crying out for many years for social reform, and had in this way been educating public opinion. Their work was now bearing fruit, and with such discussions as those they were about to enter upon there came the chance of advancing the public interests as well as the interests of the medical profession. The country was on the eve of great social reforms, which must of necessity follow the granting of old-age pensions and the feeding and medical inspection of school children. Measures had indeed been promised which must materially alter the existing Poor-law system. In these, as well as in the promised legislation dealing with insurance against sickness, inability, and unemployment, the medical profession must be prepared to take its share of the task of formulating, and, later, administering any schemes decided upon. For upon them as a body must necessarily devolve the labours which would make for efficiency of service and advantage to the public. In a crisis like this the profession must stand shoulder to shoulder, so that there might be maintained public respect, independence, and efficiency. If, on the other hand, they pursued an individual petty policy and allowed ordinary considerations unconnected with the profession to manifest themselves, then disaster would certainly follow.

Mrs. SIDNEY WEBB then opened a discussion on the Relation of Poor-law Reform to Public Health and the Medical Profession, in which Dr. FORD ANDERSON (London), Dr. COOPER PATTIN (Norwich), Dr. J. F. SYKES (St. Pancras), Dr. R. A. LYSTER (Hampshire), Dr. J. H. KEAY (Greenwich), Mr. W. M HOLDER (Hull), Mr. F. E. FREMANTLE (Herts), Dr. J. H. H. MANLEY (West Bromwich), Dr. E. ROWLAND FOTHERGILL (London), and Dr. A. H. BYGOTT (Barking) took part, and Mrs. WEBB replied.

ANÆSTHETICS.

WEDNESDAY, JULY 27TH.

President, Dr. F. W. HEWITT, M.V.O. (London).

The PRESIDENT, in his introductory remarks, expressed the belief that in the near future not only would a noticeable decrease in anæsthetic fatalities follow the greater importance now attached to the matter than in former years, but also with more reliable statistics we should get clear evidence of this decrease. He congratulated the Association upon the presentation of the report of its Special Chloroform Committee, and after describing the programme before the section, alluded to the fact that quite recently the Home Secretary had promised that next autumn he would consider steps for legislation regarding the administration of anæsthetics upon the lines of reports of the General Medical Council and the Departmental Committee of the Home Office.

Dr. DUDLEY W. BUXTON (London) and Professor A. D. WALLER (London) opened a discussion upon the Percentage System of Chloroform Administration; and were followed by Dr. H. SCHARLIEB (London), Dr. P. M. CHAPMAN (Hereford), Dr. A. G. LEVY (London), Professor FAUST (Würzburg), Professor VERNON HARCOURT, Dr. W. MCGREGOR YOUNG (Leeds), and others.

ANATOMY.

WEDNESDAY, JULY 27TH.

President, Professor ARTHUR KEITH (London).

The proceedings were opened with a long and interesting preliminary discussion on the question of

Anatomical Supply,

in which a large number of the members took part. A resolution was passed remitting the consideration of the matter to a committee of the licensed teachers present, to meet at a later date under the chairmanship of the President.

Papers were read on the Pharyngeal Tonsil, by Professor SYMINGTON (Belfast); on the Development of the Naso-Pharynx and Eustachian Tube, by Mr. I. STUART FRASER (King's College); on the Antrum of Highmore and demonstration of several abnormalities from the dissecting room, by Professor A. C. GEDDES (Dublin); and on the Trigonum Vesicæ, by Dr. WILLIAM WRIGHT and Mr. J. C. BENIANS (London Hospital).

BACTERIOLOGY.

WEDNESDAY, JULY 27TH.

President, Dr. CHARLES J. MARTIN (London).

A discussion on Recently Acquired Knowledge concerning the Bionomics of Pathogenic Organisms and its Bearing on the Spread of Disease was opened by Dr. A. C. HOUSTON (London), and papers were read on the Results of the Typhoid Campaign in South-West Germany, with Particular Reference to Carriers, by Professor LENTZ (Berlin); on Bovine Streptococcus Carriers, by Dr. W. G. SAVAGE (London); on Dysentery Carriers, by Dr. MACALISTER and Dr. MENZIES (London); on the Natural History of Certain Bacilli belonging to the Food Poisoning Group, by Dr. F. A. BAINBRIDGE and Dr. O'BRIEN (London); on the Natural History of the Bacillus Pestis, by Dr. G. F. PETRIE (London); and on Diphtheria Carriers, by Dr. J. A. ARKWRIGHT (London). Professor E. J. MCWEENEY (Dublin) and Dr. R. M. BUCHANAN (Glasgow) took part in the discussion. The proceedings were terminated by Professor LENTZ replying to some questions raised by Professor McWeeney and Dr. Buchanan, and by a few words from Dr. HOUSTON in connexion with the various papers read, in which he emphasised the fact that the general trend of the discussion was in favour of the great importance of the living bacillus carrier in the spread of disease rather than of infected inanimate objects.

DERMATOLOGY.

WEDNESDAY, JULY 27TH.

President, Dr. PHINEAS S. ABRAHAM (London).

Before the section began the members spent some time in examining and discussing the 22 rare and interesting cases of skin diseases which were exhibited in the adjoining rooms.

The PRESIDENT having welcomed the distinguished visitors present.

Dr. FEIBES (Aix-la-Chapelle) read a paper on Recent Methods in the Diagnosis and Treatment of Syphilis, and the following took part in the discussion which ensued: Mr. ERNEST LANE (London), Dr. R. B. WILD (Manchester), Mr. GEORGE PERNET (London), Mr. J. E. MCDONAGH (London), Dr. STOPFORD TAYLOR (Liverpool), Dr. GOODWIN TOMPKINSON (Glasgow), Dr. W. GRIFFITHS (London), Dr. A. EDDOWES (London), and Mr. DOUGLAS HEATH (Birmingham), and Dr. FEIBES replied.

DISEASES OF CHILDREN.

WEDNESDAY, JULY 27TH.

President, Dr. ARCHIBALD E. GARROD (London).

After a few words of greeting by the PRESIDENT a discussion was opened by Dr. J. A. COUTTS (London) and Mr. E. M. CORNER (London) on

The Diagnosis and Treatment of Non-tuberculous Joint Diseases in Children,

which was carried on by Mr. KEOGH MURPHY (London), Mr. TYRRELL GRAY (London), Mr. R. C. ELMSLEY (London), Dr. ESSEX WYNTER (London), and Dr. M. PARRY-JONES (Derby).

Mr. H. J. GAUVAIN (Alton) read a paper on the Conservative Treatment of Consumptive Cripples, and Mr. W. B. PARSONS (London) read a paper on the Diagnosis of Affections about the Hip-joint in Children.

GYNÆCOLOGY AND OBSTETRICS.

WEDNESDAY, JULY 27TH.

President, Dr. MARY A. SCHARLIEB (London).

The PRESIDENT welcomed the delegates, who included Professor Döderlein, Professor Gottschalk, and Professor Nagel. Professor von Herff was prevented from attending by the illness of his son.

Dr. G. E. HERMAN (London) opened a discussion on

Dysmenorrhœa, its Causes and Treatment,

laying special stress on the fact that there was only one variety of dysmenorrhœa which was spasmodic. Professor S. GOTTSCHALK (Berlin), Professor W. NAGEL (Berlin), Dr. CURTIS WEBB (London), Dr. R. J. JOHNSTONE (Belfast), Dr. INGLIS PARSONS (London), Dr. F. EDGE (Birmingham), Dr. W. BLAIR BELL (Liverpool), Dr. MURDOCH CAMERON (Glasgow), Dr. FRANCES IVENS (Liverpool), and the PRESIDENT took part in the discussion.

Professor D. DÖDERLEIN (Munich) read a paper on Die Entstehung und Verhütung des Puerperalfiebers, and the following took part in the discussion: Dr. HERMAN, Dr. C. E. PURSLOW (Birmingham), Dr. W. BLAIR BELL (Liverpool), Dr. HASTINGS TWEEDY (Dublin), Dr. F. EDGE (Birmingham), Dr. T. WILSON (Birmingham), and the PRESIDENT.

Papers were also read by Dr. J. MUNRO KERR (Glasgow) on Additional Cases of Rupture of the Uterus; by Dr. J. CAMPBELL (Belfast) on Air Embolism during Labour; and by Dr. J. YOUNG (Edinburgh) on the Structure of the Stroma of the Uterine Mucous Membrane and its Bearing on the Menstrual Changes. There were no discussions on the last three papers.

The meeting was very well attended, over 200 members being present.

LARYNGOLOGY.

WEDNESDAY, JULY 27TH.

President, Mr. HERBERT TILLEY (London).

Professor Dr. VON EICKEN (Freiburg), followed by Dr. D. R. PATERSON (Cardiff), introduced a discussion on the Technique of the Direct Examination of the Lower Air-Passages.

Dr. WILLIAM HILL (London) read a paper in which he advocated the use of funnel-shaped endoscopy tubes.

In the discussion which followed the following took part: The PRESIDENT, Dr. STCLAIR THOMSON (London), Mr. ERNEST WAGGETT (London), Mr. STUART-LOW (London), Dr. SCANES SPICER (London), Dr. W. PERMEWAN (Liverpool), Dr. N. C. HARING (Manchester), Dr. IRWIN MOORE (London), Dr. BROWN KELLY (Glasgow), Dr. ANDREW WYLLIE (London), Dr. J. H. BRYAN (Washington), Dr. J. KIRKLAND (Edinburgh), Dr. WALKER DOWNIE (Glasgow), Dr. T. GUTHRIE (Liverpool), Dr. J. DONELAN (London), and Dr. HEMINGTON PEGLER (London).

Dr. J. FRASER (Edinburgh) read an account of a case of Atresia of the Choanæ of Congenital Origin, and the PRESIDENT, Dr. DAN MCKENZIE (London), Dr. BROWN KELLY (Glasgow), and Mr. STUART-LOW (London) took part in the discussion which followed.

NAVY, ARMY, AND AMBULANCE.

WEDNESDAY, JULY 27TH.

President, Colonel ANDREW CLARK, A.M.S. (T.F.), (London).

The PRESIDENT, in his introductory address, said that the papers put down for reading before the section were such as were likely to be of interest in the Naval and Military Services.

Major C. G. SPENCER, R.A.M.C., then read a paper on

Local and Spinal Analgesia in Relation to Active Service,

and in the discussion that ensued the following gentlemen took part: Mr. A. E. BARKER (London), Fleet-Surgeon A. G. WILDEY, Captain J. W. H. HOUGHTON, and Fleet-Surgeon P. W. BASSETT-SMITH.

Fleet-Surgeon WILDEY read a paper on Hypodermic Injection in Action, with Suggestions for Simplifying its Administration.—Fleet-Surgeon BASSETT-SMITH and Surgeon-General G. J. H. EVATT took part in the discussion.

Major ARTHUR M. CONNELL, R.A.M.C., read a paper on the Training of the Territorial R.A.M.C., communicated by Colonel T. BROOME GILES; and Lieutenant-Colonel E. M. WILSON read a paper on Medical Requirements in War for Assisting the Royal Army Medical Corps on Mobilisation, which was discussed by the PRESIDENT, Lieutenant-Colonel G. E. TWISS, Colonel C. H. MILBURN, Surgeon-General EVATT, Dr. S. FARMER (Durham) and Major CONNELL, and Lieutenant-Colonel WILSON replied.

ODONTOLOGY.

WEDNESDAY, JULY 27TH.

President, Mr. J. HOWARD MUMMERY (London).

The PRESIDENT, after a few well-chosen words, called upon Dr. SIM WALLACE (London) to open a discussion on the Prevention of Dental Caries. At the conclusion of the paper the discussion was continued by Dr. HARRY CAMPBELL (London), Mr. F. J. BENNETT (London), Dr. WHITLEY (Shropshire), and Mr. KENNETH GOADBY (London).

Dr. HECTOR MACKENZIE contributed a paper dealing with the question of Dental Caries in Acute and Chronic Diseases. Dr. WALLACE, Mr. ARTHUR UNDERWOOD (London), Dr. WHITLEY, and Mr. W. A. MAGGS (London) also contributed to the discussion.

Mr. UNDERWOOD read a short *résumé* of the examination of a number of ancient skulls in which no carious teeth were present, and contributed a number of important facts to the discussion, which was continued by Mr. DOLAMORE (London), Mr. MAGGS, Dr. CHOURY MÜTHÙ (Bombay), Mr. C. H. HOWKINGS (Birmingham), and Professor ELLIOTT SMITH (Manchester).

OPHTHALMOLOGY.

WEDNESDAY, JULY 27TH.

President, Mr. CHARLES HIGGENS (London).

The PRESIDENT said that retrospection was always interesting, and he purposed, by way of an opening address, to sketch the progress of ophthalmology during the past 40 years. They had learned much of the pathology of trachoma and of glaucoma, but they had advanced not at all in the treatment of these grave diseases. In optical methods the advance had been immense. Means of diagnosis had been discovered that were certain and facile, and the manufacture of lenses had been revolutionised in many ways and to the greatest advantage. One striking difference in 40 years ago and now was the increase in the number of ophthalmic surgeons. Then there were a handful; now there were hundreds. He hoped that the British Medical Association would have more power to deal with abuses of practice both within and without the profession.

Dr. G. A. BERRY (Edinburgh) opened a discussion on the Future of Ocular Therapeutics as regards Local and General Treatment; Dr. J. W. H. EYRE (London) continued on the Aspect of Bacterial Products; Mr. ARNOLD LAWSON (London) and Dr. MACKENZIE DAVIDSON (London) read a

communication on Radium-therapy in Ophthalmology; Dr. H. M. TRAQUAIR (Edinburgh) read a paper on the Treatment of Purulent Keratitis by Ionotophoresis; and Mr. N. BISHOP HARMAN (London) and Dr. R. MORTON (London) read a paper on the Use of Carbon Dioxide Snow in Eye-work.

The papers were discussed by Dr. A. MACGILLIVRAY (Dundee), Dr. R. A. REEVE (Toronto), Dr. G. S. RYERSON (Toronto), Mr. HILL GRIFFITH (Manchester), Mr. A. W. ORMOND (London), Mr. LESLIE PATON (London), Dr. MONTAGUE HARSTON (Hong-Kong), Major H. A. J. GIDNEY, I.M.S.. and Major FINK, I.M.S., and Dr. BERRY and Dr. MORTON replied.

OTOLOGY.

WEDNESDAY, JULY 27TH.

President, Dr. EDWARD LAW (London).

The PRESIDENT having given a brief address,

A discussion on Aural Tuberculosis in Children, limited to diagnosis, prognosis, and treatment, without details of operative procedure, was opened by Dr. W. MILLIGAN (Manchester). The following gentlemen took part in the discussion: The PRESIDENT, Mr. R. LAKE (London), Mr. F. H. WESTMACOTT (Manchester), Mr. S. SCOTT (London), Dr. R. BÁRÁNY (Vienna), Dr. DUNDAS GRANT (London), Dr. JOBSON HORNE (London), Mr. T. MARK HOVELL (London), Mr. HUNTER TOD (London), and Mr. C. E. WEST (London), and Dr. MILLIGAN replied.

Dr. H. S. BIRKETT (Montreal) gave a Demonstration illustrated by Radiograms of the Mastoid Process.

PATHOLOGY.

WEDNESDAY, JULY 27TH.

President, Mr. S. G. SHATTOCK (London).

After a short address by the PRESIDENT, Dr. F. W. MOTT (London) read a paper on

The Effects of Alcohol on the Nervous System,

which was followed by a paper on

The Therapeutic Uses of Alcohol Vapour Mixed with Oxygen,

by Dr. W. H. WILLCOX (London). The PRESIDENT then opened a discussion on Dr. Willcox's paper, in which Dr. A. E. BOYCOTT (London), Dr. MOTT, Sir CLIFFORD ALLBUTT (Cambridge), and Dr. MACKIE WHYTE (Dundee) took part. Sir CLIFFORD ALLBUTT spoke in connexion with Dr. Mott's paper, and Dr. E. S. PASMORE (Croydon), Dr. C. MCVICAR (Dundee), and others joined in the discussion. After Dr. MOTT had briefly replied to the points raised in the discussion, the PRESIDENT called on Dr. ACHARD (Paris) to read a communication on a Method for Differentiating Living from Dead Leucocytes by staining with Neutral Red. The PRESIDENT then announced that the Pathological Section would combine with the Bacteriological Section for the discussion upon Wassermann's Reaction on Thursday morning.

PHARMACOLOGY AND THERAPEUTICS.

WEDNESDAY, JULY 27TH.

President, Professor A. R. CUSHNY (London).

Dr. O. F. F. GRÜNBAUM (London) opened a discussion upon

Treatment with Lactic Acid Organisms,

and after some preliminary remarks he indicated the cases in which the treatment was suitable. Professor HEWLETT (London) dealt with the bacteriology of lactic acid production. Professor VAUGHAN HARLEY (London) described the evidence from chemical investigation that the organism is active in allaying intestinal fermentation, while Dr. A. BRYCE (Birmingham) laid emphasis upon the dangers and disadvantages of the treatment. Dr. R. HUTCHISON (London), Dr. F. BOND (Gloucester), Professor BRADBURY (Cambridge), Mr. C. REVIS (London), Dr. A. F. HERTZ (London), and Professor SAHLI (Berne) also spoke.

PHYSIOLOGY.

WEDNESDAY, JULY 27TH.

President, Professor WILLIAM H. THOMPSON, (Dublin).

The PRESIDENT delivered a short address on the Value of the Laws of Biology in their application to the Well-being of Man and the Growing Need for a more Widespread Teaching of Physiology in Schools.

A discussion was then opened by Lieutenant-Colonel MELVILLE, R.A.M.C., who read a paper on the

Food Requirements of Man for Sustenance and Work,

taking as an example his experiments made on 20 men during a march of 12 days. The following gentlemen took part in the discussion: Dr. ROBERT HUTCHISON (London), Lieutenant-Colonel A. M. DAVIES (late R.A.M.C.), Dr. E. P. CATHCART (Glasgow), Professor J. S. HALDANE (Oxford), Dr. ALEXANDER HAIG (London), Professor G. A. BUCKMASTER (London), Dr. JOSEPH SMYTH (Naas), Dr. M. S. PEMBREY (London), Professor A. B. MACALLUM (Toronto), and Sir JAMES GRANT (Canada).

PSYCHOLOGICAL MEDICINE AND NEUROLOGY.

WEDNESDAY, JULY 27TH.

President, Dr. THEOPHILUS B. HYSLOP (London).

After the PRESIDENT had given an opening address on the Philosophy of Psychology in Relationship to Neurology,

Dr. GEORGE H. SAVAGE (London) read a paper introducing a discussion on

Marriage and Insanity,

in which the following took part: Dr. G. E. SHUTTLEWORTH (East Sheen), Dr. R. JONES (Woodford), Dr. RISIEN RUSSELL (London), Mr. J. BARKER SMITH (London), Mr. H. G. SHORE (London), Dr. FLETCHER BEACH (Alton), Dr. T. D. GREENLEES (London), Mr. R. H. SANKEY (Oxford), Dr. T. DRAPES (Enniscorthy), Dr. J. MILLS (Ballinasloe), Dr. A. S. BARNES (Birmingham), Mr. A. R. DOUGLAS (Lancaster), and the PRESIDENT.

Dr. L. D. H. BAUGH (Gartloch) read a paper on Paranoidal Symptoms at the Female Climacteric, which was discussed by Dr. R. H. STEEN (Dartford) and the PRESIDENT.

RADIOLOGY AND MEDICAL ELECTRICITY.

WEDNESDAY, JULY 27TH.

President, Dr. J. MACKENZIE DAVIDSON (London).

The PRESIDENT, in his opening address, referred to the desirability of all X ray work being done by properly trained medical men, suitably equipped for the work. He also referred to the deplorable results of the idea having become circulated that radium was a cure for malignant disease. Its use was limited, but where useful its action was definite and decisive.

Professor Sir J. J. THOMSON (Cambridge) followed with an address on the subject of the physical properties of Roentgen rays, especially the medium and soft rays, and their physiological action upon living tissues. He also described a new method of producing X rays of different degrees by allowing the rays from an X ray tube to fall upon a metal surface, the type of ray varying with the kind of metal forming the bombarded surface.

Dr. H. LEWIS JONES (London) read a paper on the

Treatment of Some Forms of Corneal Ulcer by Zinc Ionisation.

He instanced four cases of Mooren's ulcer which had been successfully treated by this method, and showed how it is necessary to get actual penetration of the ions into the substance of the cornea if the result is to be satisfactory.

Professor LEDUC (Nantes) described how the pain of the application could be avoided by increasing the current very slowly.

Mr. C. THURSTAN HOLLAND (Liverpool) showed a Model of a Screen for Conducting X Ray Examinations with the patient in the upright position, and at the same time giving proper protection to the operator.

Dr. REGINALD MORTON (London) described and illustrated the changes observed in a case of chronic X ray dermatitis. Destruction and repair took place alternately and sometimes side by side. Destruction finally predominated, necessitating the removal of the diseased phalanx.

Dr. W. F. SOMERVILLE (Glasgow) read a paper on the

Relief of Pain and Discomfort by means of High-frequency Currents,

and made a plea for the more common use of this method in the various forms of neuralgia, the pain following fracture, muscular rheumatism, and the pain of arthritic joints. He was emphatic on the point that high-frequency

treatment was by no means a thing of the past, and when applied by medical men who knew the proper methods to pursue the results were eminently satisfactory.

Dr. DOMINICI (Paris) and Dr. A. A. WARDEN (Paris) contributed a paper on

Radium Treatment of Malignant Disease,

which was illustrated by some excellent diagrams, and they also brought with them four patients from Paris to show the meeting. The results were very satisfactory, so far as it was possible to estimate.

TROPICAL MEDICINE.

WEDNESDAY, JULY 27TH.

President, Dr. F. M. SANDWITH (London).

The PRESIDENT, in his opening address, genially welcomed the visitors and members. Regret was expressed at the absence of Sir Patrick Manson from the meeting owing to illness. A short retrospect was then given of the progress of tropical medicine during the 15 years which have elapsed since the Association last met in London. At that time little attention was paid to the subject by the Association, but now by the formation of a Tropical Medicine Section the members could meet and hear the results of the work which had been done by those who were engaged in unravelling the intricate problems respecting exotic disease. In addition, two schools had been established for the teaching of tropical medicine and hygiene in England, and some of our universities held examinations for those who had been studying the subject. Foreign nations had copied our example, one of the best of such Continental schools being that established at Hamburg. The President regretted the absence of some of the distinguished workers who had done such successful work in the Panama Canal Zone, specially naming, along with others, Colonel W. C. Gorgas and Dr. Juan Guiteras, who had been expected to attend the meeting of the section. He added that we were still in ignorance of many points of detail connected with exotic disease. On the whole, our knowledge of treatment had in most instances outstripped our acquaintance with the etiology and pathology of many maladies. The post-mortem room still held secrets for those who searched in the interests of tropical medicine. Unfortunately, many investigators had to work far away from laboratories or pathological museums. The enthusiasm of some of our inquirers needed to be tempered in estimating the results, for there was a danger of approaching researches with fixed ideas which led only to the finding of proofs that were wished for, other evidence being neglected.

A discussion on Human Trypanosomiasis was introduced by Colonel Sir DAVID BRUCE. Those joining in the debate included the PRESIDENT, Dr. ANDREW BALFOUR (Khartoum), Dr. A. R. COOK (Uganda), Dr. S. C. LOW (London), Dr. W. T. PROUT (Liverpool), Dr. L. SAMBON (London), and Dr. L. D. PARSONS (Gibraltar).

A paper by Lieutenant-Colonel J. R. ROBERTS, I.M.S. (Indore), on Some Features of Tuberculosis in India, was read by one of the secretaries in the absence of the author.

Mr. JAMES CANTLIE (London) then gave a demonstration on the Operative Treatment of Abscess, and also made some observations on the use of Lacto-bacilli in the Treatment of Sprue, Post-dysenteric Diarrhœa, and Colitis, which was discussed by the PRESIDENT, Dr. RAGHAVENDRA ROW (Bombay), and Dr. A. DUNCAN (London).

The next paper was by Dr. R. ROW, entitled "Further Observations on *Leishmania Tropica* of Oriental Sore of Bombay," the discussion of which was carried on by the PRESIDENT and Professor FÜLLEBORN (Hamburg).

THE ANNUAL EXHIBITION.

As might have been anticipated, this interesting department of the annual meeting was represented on a rather larger scale than usual owing to the centralisation naturally offered by the metropolis. According to an official statement, the exhibition is the largest collection ever brought together under the auspices of the British Medical Association. The exhibits were accommodated in the Great Hall and West Gallery of the University of London, in the buildings of the Imperial Institute. Owing to the proximity of these spaces to the registration and reception bureaux a good attendance was secured, since only a staircase divided the former from the latter, and, in fact, a glimpse of the bright array of skilfully arranged stalls, crowded with the accessories inseparable from the successful working of every branch of medical science, could be obtained even by the visitor as he came only to obtain tickets for the various meetings connected with the occasion. There was thus a cursory visual introduction given of something that was being shown, and the result was a very good attendance of visitors through the avenues of new surgical appliances, drugs, special foods, and so forth, the merits of which were carefully entered into by the exhibitors. The demonstration of X ray and high-frequency apparatus was relegated to a separate place, the Jehanghier Hall at the end of the East Corridor. On the whole, no particular section seemed to preponderate in regard to representation. The honours were divided, there being just as much that was interesting to see amongst the surgical apparatus exhibited as amongst drugs, sanitary appliances, special foods, and so on. Electrical apparatus, however, seemed to rivet more attention than did any other department.

We propose to give a passing reference to the more important exhibits, and for this purpose we will deal with them according to the following classification: (1) Surgical Instruments and Appliances (including Electrical Apparatus); (2) Drugs; (3) Foods and Food Products; (4) Sanitary Appliances; (5) Mineral Waters, Beverages, &c.; (6) Publications; and (7) Exhibits of a Miscellaneous Character.

I.—SURGICAL INSTRUMENTS AND APPLIANCES (INCLUDING ELECTRICAL APPARATUS).

A novel feature of the exhibition this year was the separation of the electrical appliances from the rest of the exhibits, a special room being found for the exhibition of electrical apparatus. Having regard to the increasing importance of applied electricity in medical treatment, the plan of a separate demonstration was a good and justifiable one. Jehanghier Hall presented the appearance of an exhibition of electrical apparatus at the Royal Society Rooms, and the snap of a good many electric sparks was worrying, although it may have served to attract the attention of the visitors. In this section there were some 15 stalls. For the most part these were employed for exhibiting apparatus for X ray work, and apparatus for producing currents for sinusoidal, faradic, and galvanic treatment, cauteries, electrolysis, and so forth.

Messrs. Siemens Brothers and Co., Limited, of Caxton House, Westminster, S.W., exhibited an X ray outfit designed especially for the use of the general practitioner, and an X ray outfit also with rotating high-tension rectifier, dispensing with induction coils and interrupters altogether. The exhibit included a diathermy apparatus which attracted considerable interest. It is designed for the application of heat at any desired depth in the body. In another section of the exhibition the same firm exhibited specimens of radium salts and apparatus by means of which the action of these salts may be applied. There were also shown specimens of radio-active material and earths for rheumatism and similar complaints. The exhibit further included a clinical temperature recorder which records continuously the temperature of patients. The latest in electrical apparatus was shown by Messrs. K. Schall and Sons, of 75, New Cavendish-street, London, W. Not the least interesting of these exhibits was what are called pantostats, that is to say, a universal apparatus for adapting the current from the main for all purposes. In addition there were mercury vapour lamps and a very ingenious instrument for sterilising wounds with vapours of iodine. For this purpose the iodine is placed in a glass vessel which can be attached to a handle provided with the platinum spiral. The latter can be made incandescent by means of the electric current. A small bellows attached forces a current of air over this incandescent spiral, and the air so heated passes forward and volatilises some iodine. The iodine travels forward much in the same condition as ammonium chloride fume, free from large particles of iodine and containing only iodine vapour. The apparatus suggests many useful applications, as, for example, the sterilisation of wounds and the treatment of mucous membranes.

There was much that was interesting at the stall of the Sanitas Electrical Co., Limited, of 61, New Cavendish-street, London, W. There were some very effective X ray outfits for instantaneous radiography, their success being

based largely on the efficiency of the "Sanax" motor mercury interrupter. The exhibit included the Schnée four-cell bath for administering electric currents to the body, and there were also sundry X ray apparatus, as, for example, an X ray protecting-box, a switchboard, a new intensifying screen, and specially designed X ray couches. Messrs. F. Davidson and Co., of 29, Great Portland-street, London, W., showed, amongst other things, their thermo-generator, which, as we have already described in our columns, is a practical application of the thermopile. By means of a gas or spirit flame the current can be obtained at once and continuously for cauterising or for the illumination of surgical lamps, dispensing with dry batteries. It may be used also for charging the accumulator. At the same stall a new high-frequency apparatus was exhibited, as well as a cystoscope, a urethroscope of special design, and pharyngoscope. A very comprehensive exhibit of equipments for X ray diagnosis was shown by Mr. Alfred E. Dean, of 82, Hatton-garden, London, E.C. This firm has given considerable attention to the protection of the operator which the construction of an X ray apparatus should afford. Amongst other admirably designed apparatus shown by this firm was the Dean diascope, designed for use in radioscopic examinations of a bismuth meal. The exhibit included a steel couch for exploration, compression, and stereoscopy. On the stall of Messrs. Newton and Co., of 3, Fleet-street, London, E.C., the simplicity and efficiency of the Snook Roentgen apparatus for instantaneous radiography was made clear. Other apparatus included a switch table, tube stands, and universal apparatus for working from the supply mains, producing at will currents for any purpose.

Amongst the interesting exhibits on the stall of Messrs. H. W. Cox and Co., Limited of 47, Gray's Inn-road, London, W.C., were an ultra-violet lamp for lupus treatment, various coils and high-frequency apparatus, shields for treatment, and samples of excellent glass-blowing work. X ray equipments and electrical appliances representing the latest that skill has brought to the application of electricity in diagnosis and in medicine were illustrated in the the exhibits of Messrs. W. Watson and Sons, Limited, of 313, High Holborn, London, W.C. Here were shown the Sunic intensifier screens for X ray work reducing the exposures required under ordinary circumstances by about 1-20th. There was also Dr. Howard Pirie's stereoscope, which reveals a most intelligible effect used with X ray negatives. Lastly, there were shown the simple apparatus designed by Mr. C. R. C. Lyster for orthodiagraphic work, including exploration with tube below couch, radiography above and below couch, and stereoscopic work. The Medical Supply Association of 228–230, Gray's Inn-road, London, W.C., showed also an interesting series of apparatus of value in radiography, radioscopy, and radiotherapy. The feature of the exhibit was the Gaiffe Rochefort coil, which is said to stand the severest electrical strain, and there was also an admirable apparatus for the universal application of electricity obtained direct from the main whether it is a continuous or an alternating current. The principal exhibit on the stall of Messrs. F. R. Butt and Co. of 11, Denmark-street, Charing Cross-road, London, W.C., was a universal interrupter, for which it is claimed there is no noise or smell, and no motor is required. There were also shown a heavy discharge coil, an X ray couch, and other special apparatus indispensable to good X ray work. A series of excellent accumulators adapted for medical purposes was shown by Messrs. Longstreths, Limited, of 190, Queen's-road, Battersea, London, S.W. Amongst these Lithanode specialities, as they are called, were some medical hand lamps, cautery and lighting sets, and accumulators for X ray work and general scientific purposes. Lastly, in this section was included the exhibit of the Dowsing Radiant Heat Co., Limited, of 24, Budge-row, Cannon-street, London, E.C. This company showed their new and improved type of radiant heat bed, as well as some local appliances for treating limbs, applicable, for example, to stiff and painful joints in which the luminous heat rays of the incandescent electric lamp are utilised.

We may next pass in rapid review the excellent array of exhibits comprising surgical instruments and hospital furniture, of which there was an instructive representation. All the well-known firms were represented. There was plenty to examine and inspect in the way of up-to-date appliances at the stall of Messrs. Down Brothers, Limited, of 21 and 23, St. Thomas-street, London, S.E. Besides surgical instruments and appliances constructed on modern lines at the suggestion of surgeons, a feature was made of the aseptic hospital furniture, the work carried out by this firm in this connexion receiving obvious approval. The series of appliances for fractures and joint diseases exhibited by Messrs. C. A. Hoefftcke, Limited, of 21, Woodstock-street, London, W., attracted considerable attention by reason of their ingenuity and suitability for the purposes for which they are designed. The exhibit included appliances for tubercular hip- or knee-joints with or without contraction, fractured legs, and osteo-arthritis in hip and knee. Messrs. John Weiss and Son, Limited, of 287, Oxford-street, London, W., exhibited a wide variety of surgical instruments of approved design and utility; amongst other things shown were a saline infusion apparatus and a carbon dioxide snow apparatus for the treatment of nævus, ulcers, and so forth. Close by, Mr. Harry Brook, of 34, Illingworth-road, Bradshaw, Halifax, presented a series of interesting examples of artificial restorations of the face. An ingenious artificial finger was also shown. The restorations are constructed of aluminium coloured by a special process. The weight of an artificial nose is about a quarter of an ounce and of an ear about one-third of an ounce. Messrs. Mayer and Meltzer, of 71, Great Portland-street, London, W., had an excellent assortment of "new introductions," but they made a feature of their university examination lamps for use in the operation theatre, in the out-patient department, or in the ward. These lamps are very universally appreciated, judging from the large number now in use at hospitals and in private practice. There were some interesting examples of aseptic furniture in the exhibit of Messrs. S. Maw, Son and Sons, of 7 to 12, Aldersgate-street, London, E.C. The exhibit included a series of catheters and some special sterilising apparatus. Surgical instruments were shown on a separate stall. There were some admirable examples of operating tables, aseptic hospital furniture, electrical appliances, and sterilisers for hospital use at the stall of Messrs. Allen and Hanbury, of 48, Wigmore-street, Cavendish-square, London, W. This firm had two exhibits over which a very interesting series of appliances was distributed. Messrs. John J. Griffin and Sons, Limited, of Kimbells-street, Kingsway, London, W.C., demonstrated the advantages of administering chloroform with the well-known Harcourt inhaler, designed to give an accurate dose of the anæsthetic which may be maintained or varied at will. Messrs. Mathieu, of 4, Hercules-place, Holloway, London, N., showed the universal operating table connected with their name, as well as the table known as the Doyen-Mathieu. They also showed some of their newly invented instruments and examples of those adopted by professors of the University of Paris.

At the stall of Messrs. Skeffingtons, of 49, Ulundi-road, Blackheath, London, S.E., the advantage of their recumbent invalid lifters was practically demonstrated. The device is clamped to the bedstead and prevents a weak patient from slipping to the foot of the bed, while it enables the patient to be raised into a sitting posture and to be maintained there without exertion on his part or that of the attendant. A further device, known as the "Anastasia," is designed for the relief of patients requiring constant sanitary attention. Both appliances are of the greatest assistance and convenience. Close by, the Holborn Surgical Instrument Company, Limited, of Holborn-circus, London, E.C., showed a very interesting series of surgical instruments representing the latest designs approved; the exhibit included some excellent apparatus for sterilising instruments and dressings. A well-designed chair and one that is convenient to move without any jar to the patient is the Eastbourne improved invalid chair, designed by Mr. R. H. Woodland of 38A, Commercial-road, Eastbourne, Sussex. The Medical Supply Association of 228 and 230, Gray's Inn-road, London, W.C., exhibited the Macdonald steriliser which is of ingenious and simple construction. It is practically a steam jacketed container, but works at ordinary pressures, and by an ingenious arrangement the dressings are kept dry, a vacuum lid serving to prevent condensation on the materials. At the same stall the Guyot-Greville operating table was shown, and an example of the Grevillite vitrenamel hospital furniture. The material is steel, covered with vitreous enamel similar to the enamel on iron baths. Messrs. Arnold and Sons, of 26, 30, and 31, West Smithfield, London, E.C., had two stalls devoted to the exhibition of their aseptic hospital furniture. Their dressing tables in "everbrite" metal

(which will not corrode or rust), aurum (a metal with a golden appearance), and vitreous and other enamels were generally approved. The exhibit included a remarkable array of surgical instruments covering practically every kind of instrument invented. Sterilised dressings were the feature of the stall of Messrs. John Bell and Croyden, Limited, of 50, Wigmore-street, W., and a number of specially designed catheters. The exhibit included an excellent model of the sterilising rooms which have been erected at this firm's premises. The inlet of the apparatus is in one room and the outlet in another. The dressings are contained in hermetically sealed tins of a patented design. Messrs. Reynolds and Branson, Limited, of 13, Briggate, Leeds, exhibited a useful series of surgical apparatus, in addition to a number of special drugs and combinations which we shall refer to in the section on drugs.

Messrs. Aerators, Limited, of Upper Edmonton, London, N., showed their "Prana" carbon dioxide snow apparatus for the rapid and easy production of solid CO_2 which serves as a freezing caustic in the treatment of nævus, lupus, &c. They also showed a simple apparatus for the production of a carbonic acid effervescent bath which can be used in the manner of the Nauheim bath in the treatment of rheumatism and certain cardiac disorders. Close by, Messrs. John Timpson and Co. exhibited the well-known Johnson and Johnson adhesive plasters, ligatures, lints, and so on. The plasters have a reputation which is thoroughly deserved, owing to their uniformity, certainty, and promptness of action. Mr. Frank A. Rogers, of 327, Oxford-street, London, W., showed a selection of standard sprays, atomisers, vaporisers, &c., representing a branch of work in which he has specialised. There were spray apparatus for all kinds of application and adapted for administering solutions of varying densities. The well-known "Repello" clinical thermometer, which does not require shaking down to re-set, was shown by Mr. G. H. Zeal, of 82, Turnmill-street, London, E.C. There was also shown at this stall a new clinical thermometer, which can be kept aseptic, fitting into an outer container like a stoppered bottle. Mr. Robinett Scruby, of Sanctuary House, 11, Tothill-street, Westminster, S.W., exhibited a simple and inexpensive domestic telephone set, which is of the greatest convenience to those engaged in administering to the sick. It places the patient's room in communication with any other part of the house and altogether has obvious advantages to all concerned. Mr. S. Lee of 51, Conduit-street, London, W., demonstrated the action of his antiseptic air producer, the advantages of which were fully described in our columns last year. Seabury's standard gauzes were the feature of the exhibit of Messrs. Fassett and Johnson of 86, Clerkenwell-road, London, E.C. Besides these there were shown examples of aseptic and emergency ligatures, and the excellent medicinal and surgical plasters in indiarubber combination known as Seabury's. The above firm exhibited also on behalf of the Thermogene Company, Limited, the thermogene dressing, an absorbent wool impregnated with slightly irritant agents provoking gentle counter-irritation of the skin, and serving under certain conditions as a good substitute for poultices or stimulating plasters. A useful series of dressings and sheetings was exhibited by the Liverpool Lint Company of Mark-street Mills, Netherfield-road, North, Liverpool. Dressings of all kinds were shown, including some specially prepared tows. "Vulnoplast," which this firm makes, is described as the newest and most complete dressing with self-adhesive edges the centre portion being composed of several layers of gauze treated with any of the usual antiseptics.

Messrs. W. H. Bailey and Son, of 38, Oxford-street, London, W., exhibited a special consulting-room couch which has found considerable favour, besides some excellent examples of operation accessories, including their special registered operating table. Messrs. Hawksley and Son, of 357, Oxford-street, London, W., exhibited an interesting series of apparatus used in blood diagnosis, hæmoglobinometers by various inventors, hæmacytometers, the calcimeter, viscosimeter, and coagulometer. There were exhibited also blood-pressure apparatus, sphygmomanometers, and hæmometers. The Hospitals and General Contracts Company, Limited, of 25 to 35, Mortimer-street, London, W., exhibited their patent porcelite hospital furniture, a beautiful enamel which does not chip or change; there were also high pressure sterilisers and portable operation tables and a number of useful accessories, minor operating instruments, and so forth. Electro-surgical and ophthalmological instruments were exhibited on the stall of Messrs. E. B. Meyrowitz, of 1A, Old Bond-street, London, W. The exhibit included Dr. Edridge-Green's lanterns and wool tests for colour blindness and colour perception, Dr. J. H. Tomlinson's scotomagraph, Mr. W. Brooksbank James's test for stereoscopic visual acuity and diaphragm test, Mr. W. Wyndham's urethroscope, and an irrigation cystocope designed by Mr. J. W. Thomson Walker. There were some interesting illustrations of apparatus at the stall of the Holmquist Electric Company, Limited, of 52, Regent-street, London, W.: among others the flexible electro-thermal pad, which is intended to supersede hot-water bottles, hot compresses, or hot fomentations. There was also illustrated the Holmquist electric hot air and light apparatus for local treatment with hot air or light or both combined.

It will be seen from the foregoing account that a very wide range of exhibits was presented in this section, and there was obvious evidence that the exhibits were examined with very general interest. Next week we shall review the more important drugs and special foods which were shown.

(To be concluded.)

Medical News.

UNIVERSITY OF DURHAM.—At examinations held recently the following candidates were successful:—

THIRD EXAMINATION FOR THE DEGREE OF BACHELOR OF MEDICINE.

Pathology, Medical Jurisprudence, Public Health and Elementary Bacteriology.—Second-class Honours: Samuel Knibb Young and Thomas Copeland Storey, College of Medicine, Newcastle-upon-Tyne. Pass List: Everard Cecil Abraham and Frederick Ernest Chapman, College of Medicine, Newcastle-upon-Tyne; Evelyn Amy Constable, London School of Medicine for Women; Frederick John Henry Tobias Frere, Norman Hodgson, James Kerr, and Edwin Kidd, College of Medicine, Newcastle-upon-Tyne; George Eric Warner Lacey, College of Medicine, Newcastle-upon-Tyne, and Guy's Hospital; and Francis James Lidderdale, John George Ogle, and Fred Phillips, B.A., College of Medicine, Newcastle-upon-Tyne.

FIRST EXAMINATION FOR THE DIPLOMA IN DENTAL SURGERY.

Chemistry and Physics.—Harold Birt Coley, Aaron Gompertz Marks, Edward Errington Spencer, and George Vernon Watt, College of Medicine, Newcastle-upon-Tyne.

THE Alvarenga Prize of the Hufeland Society, for which the subject proposed this year was "Increase of Blood-pressure considered from an Etiological and Therapeutical Standpoint," has been awarded to Dr. Hasebroek of Hamburg.

THE Paris Academy of Medicine has elected Dr. Spillmann of Nancy and Dr. Testut of Lyons as corresponding members.

PRESENTATION TO A MEDICAL MAN.—Mr. A. G. Lawrence, M.D. St. And., J.P., was on July 20th presented by the inhabitants of Chepstow with a massive silver tray, bearing the inscription: "Presented to Arthur Garnons Lawrence, M.D., by many friends in token of the esteem and regard in which he has been held during the 50 years of medical service to sick and poor in and around Chepstow." Mrs. Lawrence was presented with a silver kettle and stand suitably inscribed. The presents were accompanied by a large album containing the names of the subscribers.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

Public Health (Health Visitors) Bill.

THE Public Health (Health Visitors) Bill, which was introduced in the House of Commons by Mr. BURNS to enable local authorities under the Notification of Births Act, 1907, to appoint health visitors, has been published. Its operative clause is in the following terms: (1) The local authority for the purposes of the Notification of Births Act, 1907, of any area outside London in which that Act is for the time being in force may appoint suitable women, to be known as health visitors, for the purpose of giving to persons advice as to the proper nurture, care, and

management of children under five years of age, including the promotion of cleanliness. (2) The qualifications to be possessed by persons appointed to be health visitors under this section shall be such as the local authority may, after consultation with their medical officer of health, require.

HOUSE OF LORDS.

THURSDAY, JULY 21ST.

Voluntary Aid Detachments of the Territorial Force.

Viscount GALWAY raised the question of the efficient nursing of the Territorial Force and alluded to the scheme issued by the Order of St. John of Jerusalem. He expressed the hope that if a limited number of lectures were given in connexion with the scheme by nurses to women candidates for certificates, the remaining lectures in the course would be delivered by medical men, and the examinations for the final certificates should be conducted by them.

Lord LUCAS (Under Secretary of State for War) said in reply that the St. John Ambulance Association had formed a special branch in connexion with the Territorial Force. An Advisory Council had been formed recently, and was sitting at the War Office. Recommendations had been submitted to the Army Council by it, but no decision had yet been given upon them. There was no intention to lower the standard of efficiency of persons entering the voluntary aid detachments of the Territorial Force. There was a great demand that the grant of certificates should be facilitated, and the acceptance of a certain number of candidates who had not certificates granted by the St. John Ambulance Association was under consideration. The vexed question whether classes should be trained by nurses or medical men was being considered by the Advisory Council, and he added that the War Office would recognise only those voluntary aid detachments which were recognised by the county associations.

TUESDAY, JULY 26TH.

The Midwives Bill.

The House considered the Midwives Bill in Committee.

Clause 1 laid down the composition of the Central Midwives Board. It distributed the right to nominate members amongst various bodies and provided that two certificated midwives were to be appointed members of the Board—one by the Incorporated Midwives' Institute and one by the Royal British Nurses' Association.

Lord AMPTHILL moved an amendment the effect of which was to give to the Incorporated Midwives' Institute two members, one of whom was to be a certificated midwife. That would preserve to the institute the right to be represented by a medical man, as it had been in the past. This institute was the only body representing the midwives of the country. It raised the funds necessary for carrying through the Midwives Act, 1902.

Earl BEAUCHAMP (the Lord President of the Council), who was in charge of the Bill, thought it most desirable that there should be certificated midwives on the Board. He was not, however, prepared to accept the amendment unless there was a general expression of opinion in favour of it.

The Earl of DONOUGHMORE and Viscount GOSCHEN both spoke in favour of the amendment.

Earl BEAUCHAMP then announced that he would accept it.

The amendment was agreed to.

Lord AMPTHILL moved an amendment to the effect that the representative of the British Nurses' Association need not necessarily be a certificated midwife.

The Earl of LYTTON supported the amendment on behalf of the Royal British Nurses' Association. As the Bill now stood, one representative, who must be a midwife, was given to the association, but the association desired to have the option of appointing such person as seemed fit to them at the time being. There was no suggestion that they would not appoint a midwife. They might appoint a midwife if their interests were best served by such an appointment, but on the council of the association there were medical men as well as nurses. The association being composed of those elements should not be confined to representation by a midwife.

Earl BEAUCHAMP said that their lordships had under discussion a board to deal with midwives, but the Bill only provided that two of its members out of more than a dozen should be midwives. He thought that that provision ought to remain.

On a division the amendment was carried by 32 votes to 26.

The clause as amended was agreed to.

Clause 11 of the Bill, which deals with notification of practice, was as follows:—

(1) Where a woman certified under the principal Act who has not given to the local supervising authority such a notice as is mentioned in section 10 of the principal Act attends any women in childbirth in any capacity other than that of midwife, and a duly qualified medical practitioner is not present at the time of the birth, she shall, within forty-eight hours from the birth, give to the local supervising authority notice in writing of the fact that she so attended, and if she omits to do so shall be liable on summary conviction to a fine not exceeding five pounds, but nothing in this section shall be construed as exempting any woman practising as a midwife, or holding herself out as so practising, from the obligation to give any notice which, under section 10 of the principal Act, she is required to give.

(2) Where a woman certified under the principal Act has given a notice in compliance with section 10 of that Act and subsequently changes her address, she shall, within seven days after such change, give notice of the change to every local supervising authority to which she had previously given notice under that section, and if she omits to do so shall, on summary conviction, be liable to a fine not exceeding two pounds.

Viscount GOSCHEN had an amendment on the paper to leave out subsection 1 of the clause.

Earl BEAUCHAMP asked the noble viscount not to move it as he had an amendment which he believed would meet the case which the noble viscount had in view. He then moved an amendment to make the clause read: "Where a woman certified under the principal Act who has not given to the local supervising authorities such a notice as is mentioned in Section 10 of the principal Act, or a woman not so certified attends any woman in childbirth," &c. He quite admitted that the amendment was somewhat clumsy. In the case of the attendance of the uncertified woman becoming habitual, the Central Midwives Board would be able under the amendment to take the necessary steps. As the Bill stood at present it did act unfairly towards certified midwives. He hoped that the amendment would meet the case.

Viscount GOSCHEN said that the amendment met his objection to the section.

The amendment was agreed to and the clause was passed.

Clause 12 of the Bill gives reciprocal treatment to midwives certified in other parts of His Majesty's dominions.

Earl BEAUCHAMP moved an amendment to permit women to be certified who were qualified to be appointed midwives by boards of guardians in Ireland under any regulations of the Local Government Board for Ireland for the time being in force. The Bill, he said, could not properly be adapted to include Ireland, but by the amendment it was possible to deal with a grievance affecting midwives in that country.

Lord CLONBROCK said that he had been informed that the Government was prepared to bring in a special Bill dealing with Ireland next year containing the provisions embodied in existing English legislation. He asked the Government to give him a definite answer on that subject.

The amendment was agreed to.

Lord CLONBROCK repeated his question.

Earl BEAUCHAMP said that the introduction of a Bill dealing with this subject in Ireland was not in his province. He had, however, been in consultation with the Chief Secretary for Ireland, who authorised him to say that he would be glad to deal with this subject, but whether such a measure would follow the lines of this Bill it was impossible for him to say. The conditions in Ireland were different from those in England. The Government would be glad to have the support of noble lords for an Irish Bill.

The clause was agreed to.

Clause 13 provides that a local supervising authority may aid the training of midwives whether within or without their area, and may make grants for the purpose.

Lord AMPTHILL moved an amendment to permit the local supervising authority to make grants in aid of maintenance of midwives also.

Earl BEAUCHAMP resisted the amendment on the ground that it would place a large burden on local taxation.

The amendment was negatived without a division, and the clause agreed to.

Clause 17, which deals with the payment of fees of medical practitioners called in on the advice of midwives, was in the following terms:—

(1) Where a duly qualified medical practitioner has been summoned upon the advice of a certified midwife attending a woman in child-birth to render assistance in a case of emergency in pursuance of any rule framed by the Central Midwives Board, he shall, on complying with the prescribed conditions, be entitled to recover from the board of guardians of the Poor-law union in which the woman resided such fee in respect of his attendance as may be prescribed.

(2) Where any such fees have been paid by a board of guardians, the amount thereof may, if the board of guardians think fit, be recovered summarily as a civil debt from the patient or person liable to provide the patient with medical aid.

(3) Every board of guardians shall in each quarter send to every local supervising authority concerned a list of the cases within the area of the authority in respect of which fees have been paid by the board of guardians under this section.

(4) The Local Government Board may make regulations with respect to any matter which under this section is to be prescribed and as to the manner in which boards of guardians are to carry out their powers and duties under this section.

(5) The payment of fees by boards of guardians under this section shall not be considered to be parochial relief, alms, or charitable allowance to any person, nor shall any person by reason thereof be deprived of any right or privilege, or be subjected to any disability or disqualification.

Lord AMPTHILL moved the first of a series of amendments, the object of which was to substitute the local supervising authority of the county or county borough for the board of guardians of the Poor-law union as the authority from whom the fee should be recovered, and to excise subsections (2), (3), (4), and (5). His proposal, he said, was one of very great importance. The Bill had been before the House for some time, and when it was withdrawn it was generally supposed that the object of withdrawing it was to amend this very clause in order to meet a large number of objections which had been raised to it. The Bill, however, returned to the House with the same objectionable clause in it. The objection to the clause was that it would bring thousands of poor but thrifty persons within touch of the Poor-law. The noble Earl in charge of the Bill had said that he had removed this objection by inserting a new subsection that declared that the payment of the medical man was not to be regarded as parochial relief. There was, however, really no change in the clause. It would still bring people within the grip of the Poor-law guardians without their consent if they were forced by law to make payments for which they did not contract.

The Earl of LYTTON supported the amendment.

Earl BEAUCHAMP resisted the amendment. It made no provision for the ultimate recovery of the fee either from the patient or from her husband. The amendment raised the whole question of the way in which free medical assistance should be given to these people. His Majesty's Government said that the authorities mentioned in the Bill were the appropriate authorities to deal with this question. It was far more business-like not to prejudge a large question which must be raised sooner or later. The Bill was much more likely to get through in its present form.

The Earl of DONOUGHMORE opposed the amendment.

The amendment was ultimately negatived and the clause agreed to.

The Bill passed through committee.

HOUSE OF COMMONS

WEDNESDAY, JULY 20TH.

Nursing the Sick Poor.

Mr. ERNEST JARDINE asked the President of the Local Government Board whether he would consider the issuing of an order by which boards of guardians should be empowered to contribute towards the cost of cottage nursing in the homes of the sick poor by nursing associations, in the proportion of visits paid and total cost, on the same lines that

such boards could contribute towards the cost of workhouse children attending elementary schools.—Mr. BURNS replied: Boards of guardians are already empowered under Section 10 of the Poor-law Act, 1879, with the consent of the Local Government Board, to subscribe towards associations for providing nurses, and the Board has sanctioned many subscriptions under this enactment. In the recent circular on outdoor relief I drew attention to the importance to guardians of being in a position to supply nurses in case of need, and expressed the opinion that nurses are generally best provided through the agency of local nursing associations. At the same time I intimated willingness to continue to sanction subscriptions for this purpose.

The Metropolitan Asylums Board and Sanatoriums.

Mr. EDMUND HARVEY asked the President of the Local Government Board whether he was prepared favourably to consider a scheme for making use of some of the vacant hospital accommodation under the control of the Metropolitan Asylums Board for the provision of sanatoriums for consumptives if the Metropolitan Asylums Board would submit such a scheme.—Mr. BURNS answered: The whole question of utilising the spare accommodation in the institutions under the control of the managers of the Metropolitan Asylums District is under consideration. I may say, however, that the question of using such accommodation for consumptive patients is one involving special difficulties.

Industrial Diseases and Accidents and Certifying Surgeons.

On the discussion in report of the Home Office Vote,

Sir CHARLES DILKE raised questions connected with factory legislation, and in particular with regard to lead poisoning. There had been a good deal of progress, he said, as regarded industrial poisoning except perhaps lead. In regard to phosphorus there was a new Act of Parliament, and he was glad to learn that the Government of India was considering the introduction of similar legislation into India. The report on factory inspection which had been submitted to Parliament took credit that necrosis had been stamped out. However, there had unfortunately been an outbreak of one of those old cases of phosphorus necrosis, which gave rise to some suspicion whether the statements which had been previously made upon the subject were all true, or whether there had been instances of the disease. He would ask the Home Office that a very careful watch should be kept upon any factories that might be suspect in order to see that there was no infraction of a very beneficial law. Dealing with the use of lead in the Potteries, he said that it was open to the Home Office, no doubt, to say that the inquiry had done good and there was improvement in the figures with regard to cases of lead poisoning. However, the improvement was a fluctuating one alike in the Potteries and in the lead trade, and as the cases had gone up in one they would go up in the other too. As regarded lead, there was a falling off in the figures of last year. On the other hand, there had been a total increase again this year. Whatever the explanation, the fact remained that whilst lead was used in certain industrial processes these cases, with whatever fluctuations, would continue to occur. It was only two years since the Home Office went back upon their policy of prohibiting or discouraging the use of dangerous material and reverted to the idea of curing the danger by ventilation, which was unsatisfactory to many of those who had watched it in these trades. It seemed impossible to secure safety by that means. He went at length into the findings of the recent inquiry. He thought that the suggested scheme of self-inspection was one which the House would never look at. He would press upon the Home Office certain points in regard to the inquiry—for instance, those which concerned the whole system of certifying surgeons and medical referees in dangerous trades. The fees were different in Ireland from what they were in England. They were five times as high in the case of an action for workmen's compensation as in the case of the same action taken under the dangerous trades provisions, so that a poor man in one case had to pay 5*s.* for the same certificate which he could get for 1*s.* in another case. Another matter which the right honourable gentleman raised was the employment of industrial mothers at times not far removed from confinement. He hoped that in connexion with the invalidity insurance legislation suggested for next year maternity insurance would be considered. Last year the dangers in connexion with the Potteries had been raised. He hoped that this year he would be excused for referring to the terrible rate of infant mortality in connexion with employment in dangerous trades in that district. THE LANCET had made a special inquiry since last year, and it published the results in June. That journal pointed out that a very serious situation existed in the Potteries in consequence of the excessive mortality amongst the infant population.[1]

Mr. HILLS also dealt at length with the question of lead poisoning in the Potteries. The cases of lead poisoning in 1896 were about 400. After five years had elapsed there were 100 cases in 1900, showing that in that period the cases fell by three-fourths. Since 1901 the figures had been stationary. The figures for last year looked rather lower at first sight, as though there was a progressive fall. He was sorry to say that that was not the case. The figures for the first half of this year showed a very substantial rise. The death-rate was about 1 in 1000. The whole evil was not contained in these figures. The dangers to health extended far wider than that. It fell especially hardly on women. Lead poisoning injured the child-bearing capacity of women, so much so that miscarriages were three or four times above the average. He thought that fresh measures should be taken to exterminate the terrible evil of lead poisoning.

Mr. GILL dealt with the position of medical referees. He said that when the Workmen's Compensation Act was in committee the Labour party pressed very strongly that referees who were appointed should not be engaged in private practice. They were unsuccessful. The Home Secretary of that day thought that it would cost too much money. The result was that the referees who finally decided whether or not a person after injury was fit for his work were medical men engaged in private practice. This gave rise to a considerable amount of dissatisfaction both amongst the workmen and amongst employers in Lancashire. The vice-chairman of the Cotton Employers Federation told him only last night that he would prefer that instead of the medical referees being engaged in private practice they should be State officials with large districts and that they would then be able to give unbiased decisions because they would not depend for part of their salaries on being engaged by other people. It was said, he believed with some truth, that some of these medical referees were engaged in examining injured persons for the insurance companies. It was distinctly understood that that should not take place. He believed that it was provided in the Workmen's Compensation Act—at any rate, it was stated about the time of its passing—that if they were engaged in any case by an insurance company they would not in that case act as medical referees. That was not enough by any means. The medical referees ought to be in such a position that they could have no bias whatever. He knew one case where the partner of a medical referee examined a person for the insurance company, and afterwards the same person was sent to the medical referee who declared that he was fit for his work. That man had to give up his situation as he was not able to perform the work, and his compensation was stopped. In a very serious case a man was examined by a medical referee, who declared him to be fit to follow his occupation. The man, however, could not do so, and the committee of the Spinners Association, every member of which was a practical man and knew exactly what was required for the purpose of performing the work, felt that the man was so seriously injured that they paid him £100 as permanent accident grant. The House could not expect workmen to be satisfied when the decisions of medical referees were given in this way and there was no appeal. In many cases employers were now asking injured persons to bring certificates of medical men to show their condition from time to time. That was distinctly illegal. These certificates generally cost 1*s.*, and it was not right that an injured person should be put to that expense because an employer wanted to know his condition. The Act provided that an employer could have a workman examined by his own medical man at his own expense, and so long as that was the case he thought that it was decidedly wrong to require workmen to bring certificates in the way he had described. He wanted the Workmen's Compensation Act to be administered in as efficient a manner as possible.

Mr. MASTERMAN (Under Secretary of State for the Home Department) replied to the debate. He said that for many years a perpetual fight had been carried on with lead poisoning, one of the most terrible diseases of our industrial system. He shared the rejoicing that last year's return showed a diminution of nearly one-half in the Pottery district. But the first six months of this year failed to carry out the expectations which the previous return had led honourable Members to entertain. In the industry trade had greatly improved, and this was unfortunately reflected in the increase in the number of cases of lead poisoning. He disagreed with some of the criticisms which had been passed on the report of the Lead Poisoning Committee. Investigations had been carried on for two years, and he could assure all those who were interested that the evidence taken was most voluminous. The inquiry was carried on by representatives of the masters and of the employees along with impartial persons, and the result was an unanimous report, with the single exception of the Labour representative of the women workers, who, in her memorandum, did not so much take exception to the recommendation in the report, but recommended more drastic measures of dealing with the question. He thought that it would be a very serious matter if the Home Secretary threw over a report on such a subject upon which so much unanimity had been displayed in order to start a rival policy of his own, or, what would be more fatal still, to appoint another committee. There were one or two subjects connected with the report on which he (Mr. Masterman) would have preferred that the committee should have come to another conclusion. He should have been pleased if the committee had seen its way to schedule certain articles. The question was considered very thoroughly, but the committee recognised the difficulty in regard to the importation of articles from abroad. It came with reluctance to the conclusion that the remedy suggested was impracticable. With regard to the use of phosphorus, he might point out that the use of yellow phosphorus had been stamped out under an international convention, but there was no international convention in regard to the use of lead. If all the countries engaged in lead manufacture were to join in the prohibition in certain cases in the use of lead the position would soon be very different. The report of the Lead Committee recommended a very considerable extension of the special order which at present existed, and recommended what some honourable Members rather unduly condemned—namely, self-inspection in factories. He did not see why the course suggested should not be given a trial as a supplementary system to the present factory inspection. If the special rules and this system of self-inspection proved a failure those who had considered this question were anxious to be in a position to recommend the total prohibition of the employment of women—or at any rate of women under a certain age—in the lead factories. If within a reasonable time it was proved that lead poisoning could not be got rid of by special rules and self-inspection, he thought due notice should be given to the masters that other action would be taken if the figures in regard to the disease did not come down. A suggestion was made that the Home Office could put into operation the power to close the worst factories. Might he point out that that power was not in possession of the Home Office, and it could only appeal for a decision in this matter. One such factory was closed last year, but a very strong case indeed had to be made out in order to obtain a conviction. The honourable gentleman continued: "One word as to the question of the certifying surgeons. I agree the position is not a very satisfactory one, and I recognise that some action will probably have to be taken in the not distant future. We all recognise that sooner or later a committee will have to be appointed to consider the working of the Workmen's Compensation Act in regard to such questions as whether old people are being driven out of employment, as well as questions regarding the certifying surgeons and medical referees. The Act has only been in operation three years, and the committee will be better appointed when it has settled down and we can get the greatest possible evidence as to the necessity for any change. The right honourable gentleman the Member for the Forest of Dean (Sir C. Dilke) recognises the divergence of fees demanded. The fee of 1*s.* is supplemented under the Factory Order of 1901 by an additional amount given by the Home Office, but the fee of 5*s.* under the Workmen's Compensation Act for a complete examination cannot be supplemented. We do not feel very much inclined to deplore the very small fee paid for a very thorough examination, and what we should press for is not a reduction of the fee of 5*s.*, but whether it might not be possible for the Home Office to supplement in the one case as in the other the fee paid to the medical man." The case of infant mortality in industrial centres,

[1] THE LANCET, June 4th, 1910, p. 1575.

the honourable gentleman continued, had been raised. The Home Office was concerned with the question. It had called for special reports from the medical officers of health, especially from those of the districts most concerned. These reports, which were of a voluminous character, were now before the Home Office, and he hoped that they would give some definite guidance.

Small-pox in Bombay.

Sir MAURICE LEVY asked the Under-Secretary of State for India whether an epidemic of small-pox had recently occurred in Bombay; whether records were kept as to the vaccinal condition of the cases in the hospitals; and, if so, whether the Government had any information as to the causes of the severity of the outbreak.—Mr. MONTAGU wrote in reply: Small-pox in an epidemic form was prevalent in Bombay city from the middle of February last to the middle of May. The Secretary of State understands that the practice in Indian hospitals is to keep a record of the vaccinal condition of every patient suffering from small-pox, but he has no information as to the data thus obtained in the recent epidemic in Bombay or as to the light thereby thrown on the causes of the outbreak. According to statements in the Bombay newspapers the severity of the epidemic was largely due to cases imported by pilgrim ships returning from Jeddah and other ports in the Red Sea.

THURSDAY, JULY 21ST.

Malta Fever.

Answering Mr. CHANCELLOR, who asked a long question in regard to the new Commission to be appointed for the purpose of investigating Malta fever,

Colonel SEELY said: It is not proposed that the new Commission shall concern itself with any other question than the manner in which goats become infected, which is the only matter in connexion with the causation of Malta fever which remains obscure. The elected members of the council of Government are only prepared to concur in the appointment of the committee on the condition that this question is made the special object of their inquiry. The Secretary of State has agreed to the proposal of the elected members that they should be allowed to nominate an independent local practitioner to be a member of the Commission. It is not yet known whom they will choose.

Sir J. RANDLES: Is the right honourable gentleman quite satisfied that the insanitary conditions which prevailed at Malta had not a great deal to do with this fever?—Colonel SEELY: It is rather difficult to discuss this highly technical matter by means of question and answer. Of course, every sanitary improvement tends to reduce disease. Speaking for myself, having inquired into the matter as much as I can, I think there is no doubt whatever that goats' milk was the principal cause is proved without a shadow of a doubt.

An Experiment on Rabbits.

Mr. GREENWOOD asked the Under Secretary of State for the Home Department whether his attention had been called to an account of certain operations of oöphorectomy performed by Mr. S. G. Shattock upon two rabbits on Oct. 12th and Nov. 5th, 1908, respectively, and published in the Proceedings of the Royal Society of Medicine, Vol. III., No. 2, issued in December last, after which operations the animals were allowed to recover from the effects of the anæsthetic administered and were kept alive for observation, as part of the experiments, until April 10th and Oct. 11th, 1909, respectively; and whether Mr. Shattock held a certificate authorising these experiments at the time when he performed them.—Mr. MASTERMAN replied: As my honourable friend is doubtless aware, Mr. Shattock is the licensee referred to in the Home Secretary's reply of July 5th. The facts are as stated in the question and the renewal of the licence was refused in consequence. My right honourable friend regrets that after what he said in his previous reply the honourable member should have thought it necessary to bring forward the name of the licensee.

Combating Tuberculosis.

Mr. LYNCH asked the President of the Board of Education whether, in making grants to medical schools this year, he would pay special attention to that branch of medical research which was directed to combating tuberculosis; and whether, in view of the far-reaching importance of the original research which had been carried out at St. Mary's Hospital bacteriological department, he would remove the financial embarrassment which threatened to impede the development of that work.—Mr. RUNCIMAN said, in reply: The Board's grants to such institutions as medical schools are made in respect of organised courses of instruction and not in respect of particular subjects or departments.

MONDAY, JULY 25TH.

Medical Degrees and Diplomas.

Mr. LYNCH asked the Secretary of State for the Home Department whether his attention had been called to the disparity in the value of medical degrees and diplomas which entitled their possessors to practise medicine in this country; and whether he would take steps, by legislation or otherwise, towards establishing a fair standard of examination qualifying for medical practice.—Mr. CHURCHILL replied: It is the statutory duty of the General Medical Council to inspect and report upon all qualifying examinations, and if it appears to it that the standard of proficiency required at the qualifying examinations held by any of the licensing bodies is insufficient to make a representation to that effect to the Privy Council who are empowered, if they think fit after due inquiry, to order the withdrawal from medical authorities of the right to hold qualifying examinations.

ORDER OF ST. JOHN OF JERUSALEM.—The Service Medal of the Order for long and efficient service to the ambulance department has been conferred upon the following members of the St. John Ambulance Brigade: Honorary Surgeon A. F. Street, M.D. Cantab., Westgate-on-Sea; and Honorary Surgeon J. Crew, L.R.C.P. Lond., M.R.C.S., Wellingborough Corps.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

AWBURN, G. J., M.B., M.S. Edin., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Mottram and Glossop District of the counties of Chester and Derby.

BRACHI, F., M.R.C.S., L.R.C.P. Lond., has been appointed Assistant School Medical Officer to the Borough of Portsmouth.

CAMERON, JOHN, M.D. Aberd., has been appointed Examiner in Anatomy at the University of St. Andrews.

CAMPBELL, A. J., M.R.C.S., L.R.C.P. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Ross District of the county of Hereford.

MANN, DAVID, M.B., Ch.B. Edin., F.R.C.S. Edin., has been appointed Honorary Anæsthetist to the Wolverhampton and Staffordshire General Hospital.

PARAMORE, R. H., M.D. Lond., F.R.C.S. Eng., has been appointed Pathologist and Registrar to the Hospital for Women, Soho-square, W.

PRICE, FREDERICK W., M.D. Edin., M.R.C.P. Lond., has been appointed Additional Examiner in Medicine and Clinical Medicine in the University of St. Andrews.

REVIE, DUGALD, M.B., C.M. Glasg., has been appointed Physician-Superintendent at the Strathmore Hospital, Blairgowrie.

STRANGE, E. W., M.D. Lond., has been appointed Honorary Anæsthetist to the Wolverhampton and Staffordshire General Hospital.

WALSHE, F. M. R., M.B., B.S., L.R.C.P. Lond., has been appointed House Physician at University College Hospital.

WILBERFORCE-SMITH, D., M.B., B.S., has been appointed Assistant Registrar to the Samaritan Free Hospital, London.

WOODSEND, R. N., M.R.C.S., L.R.C.P. Lond., has been appointed House Surgeon at University College Hospital.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BIRMINGHAM GENERAL HOSPITAL.—Resident Pathologist for six months. Salary £50 per annum, with board and residence. Also Two House Physicians for six months. Salary £50 per annum, with residence, board, and washing. Also Two Assistant House Surgeons for three months. Salary at rate of £40 per annum, with residence, board, and washing.

BIRMINGHAM, QUEEN'S HOSPITAL.—House Surgeon. Salary at rate of £50 per annum, with board, lodging, and washing.

BOURNEMOUTH, ROYAL NATIONAL SANATORIUM.—Resident Medical Officer. Salary £10 per month, with board, residence, and washing.

BRADFORD CHILDREN'S HOSPITAL.—House Surgeon. Salary £100 per annum.

BRIGHTON, SUSSEX COUNTY HOSPITAL.—Two Assistant House Surgeons, unmarried. Salary £60 and £50 per annum respectively, with apartments, board, and laundry.

BRISTOL ROYAL INFIRMARY.—Honorary Medical Registrar.

CAMBRIDGE, CAMBRIDGESHIRE, &c., LUNATIC ASYLUM, Fulbourn.—Second Assistant Medical Officer, unmarried. Salary £120 per annum, with board, lodging, and attendance.

CARDIFF INFIRMARY (GENERAL HOSPITAL).—House Surgeon, for six months. Salary £30, with board, residence, and laundry.

CHESTERFIELD AND NORTH DERBYSHIRE HOSPITAL.—Junior House Surgeon. Salary £60 per annum, with board, apartments, and laundry.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—Clinical Assistant.

CUMBERLAND COUNTY COUNCIL.—Junior Assistant to Medical Officer of Health. Salary £225 per annum.

DEVONPORT, ROYAL ALBERT HOSPITAL.—Assistant Resident Medical Officer, unmarried, for six months. Salary at rate of £50 per annum, with board, apartments, and laundry.

DORCHESTER, COUNTY ASYLUM.—Junior Assistant Medical Officer. Salary £140 per annum, with board, &c.

DOVER, ROYAL VICTORIA HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum, with board, lodging, and washing.

EASTBY SANATORIUM, near Skipton.—Assistant Resident Medical Officer, unmarried. Salary £130 per annum, with rations, apartments, and laundry.

GLOUCESTER, GLOUCESTERSHIRE EDUCATION COMMITTEE.—School Medical Inspector. Salary £250 per annum.

GUEST HOSPITAL, Dudley.—Assistant House Surgeon for six months. Salary £75 per annum, with residence, board, and washing.

GUILDFORD, ROYAL SURREY COUNTY HOSPITAL.—Assistant House Surgeon. Salary £50 per annum, with board, residence, and laundry.

HARTLEPOOLS HOSPITAL.—House Surgeon. Salary £100 per annum, with board, lodging, and washing.

HASTINGS, ST. LEONARDS, AND EAST SUSSEX HOSPITAL.—Assistant House Surgeon for six months. Salary £20, with rooms, board, and washing.

HÔPITAL FRANÇAIS, 172, Shaftesbury-avenue, W.C.—Second Resident Medical Officer, unmarried. Salary £50 per annum, with board and laundry.

HULL, ROYAL INFIRMARY.—Two Casualty House Surgeons. Salary £30 per annum, with board and lodging.

LABORATORIES OF PATHOLOGY AND PUBLIC HEALTH.—Assistant Clinical Pathologist.

LEEDS PUBLIC DISPENSARY.—Honorary Surgeon.

MANCHESTER HOSPITAL FOR CONSUMPTION AND DISEASES OF THE THROAT AND CHEST.—Assistant Medical Officer and Pathologist. Salary £60 per annum.

MEDICAL DEPARTMENT OF THE NAVY, London, S.W.—Dental Surgeon for duty with the Naval Forces in the United Kingdom. Salary £1 per diem.

MIDDLESBROUGH, NORTH RIDING INFIRMARY.—Assistant House Surgeon. Salary £75 per annum, with residence, board, and washing.

MILE END OLD TOWN, HAMLET OF.—Senior Assistant Medical Officer. Salary £150 per annum, with board, lodging, and washing. Also Junior Assistant Medical Officer. Salary £120 per annum, with board, lodging, and washing.

NEWCASTLE-UPON-TYNE UNION WORKHOUSE.—Assistant Medical Officer (female), unmarried. Salary at rate of £100 per annum, with apartments, rations, and washing.

NOTTINGHAM GENERAL HOSPITAL.—Honorary Assistant Physician.

OLDHAM INFIRMARY.—Three House Surgeons for six months. Salaries £120, £100, and £80 per annum, with residence, board, and laundry.

OXFORD, RADCLIFFE INFIRMARY AND COUNTY HOSPITAL.—Junior House Surgeon, unmarried, for six months. Salary at rate of £80 per annum, with board, &c.

REDHILL, EARLSWOOD ASYLUM.—Junior Assistant Medical Officer, unmarried. Salary £130 per annum, with board, lodging, and washing.

ROYAL NATIONAL MISSION TO DEEP SEA FISHERMEN.—Medical Officer. Salary £4 4s. per week and board.

ROYAL NAVAL MEDICAL SERVICE.—Fifteen Commissions.

ST. PAUL'S HOSPITAL FOR SKIN AND URINARY DISEASES, Red Lion-square, W.C.—Clinical Assistant for three months. Salary 50 guineas per annum.

ST. PETER'S HOSPITAL, Henrietta-street, Covent Garden, W.C.—Two Clinical Assistants.

SALFORD UNION INFIRMARY, Hope, Pendleton.—Medical Superintendent. Salary £350 per annum.

SHEFFIELD ROYAL HOSPITAL.—Assistant House Surgeon and Assistant House Physician, unmarried. Salary £50 each per annum, with board, lodging, and washing.

SUNDERLAND INFIRMARY.—Two House Surgeons. Salary £80 per annum, with board, residence, and washing.

THROAT HOSPITAL, Golden-square, W.—Resident House Surgeon. Salary £75 per annum, with board, residence, and laundry.

TRURO, ROYAL CORNWALL INFIRMARY.—House Surgeon, unmarried. Salary £100 per annum and board.

VENTNOR, ROYAL NATIONAL HOSPITAL FOR CONSUMPTION.—Assistant Resident Medical Officer, unmarried. Salary £100 per annum, with board, lodging, &c.

WEST HAM HOSPITAL, Stratford, E.—Junior House Surgeon. Salary at rate of £75 per annum, with board, residence, &c.

WINCHESTER, ROYAL HAMPSHIRE COUNTY HOSPITAL.—House Physician.

WORCESTER GENERAL INFIRMARY.—House Physician. Salary £100 per annum, with board, residence, and washing.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies as Certifying Surgeons under the Factory and Workshop Act at Alyth, in the counties of Forfar and Perth; and at Upton, in the county of Worcester.

Births, Marriages, and Deaths.

BIRTHS.

BARNES.—On July 21st, at Eye, Suffolk, the wife of Henry E. Barnes, M.D., of a son.

BENNETT.—On July 21st, at Hillcrest, Northwood, the wife of Norman G. Bennett, M.A., M.B., B.C. Cantab., L.D.S. Eng., of Brook-street, Grosvenor-square, of a son.

BLOMFIELD.—On July 23rd, at Queen's-road, Peckham, S.E., the wife of Alfred Blomfield, M.R.C.S., L.R.C.P., of a son.

CARNEGIE DICKSON.—On July 20th, at Findhorn-place, Edinburgh, the wife of W. E. Carnegie Dickson, M.D., F.R.C.P.E., University of Edinburgh, of a son.

KENDREW.—On July 22nd, at Newport-terrace, Barnstaple, the wife of A. J. Kendrew, M.B., B.S., of a son.

NATTLE.—On June 24th, 1910, at Mohales Hoek, Basutoland, the wife of W. R. Nattle, M.R.C.S. Eng., L.R.C.P. Lond., of a son.

SARGENT.—On July 21st, at Harley-street, W., the wife of Percy Sargent, F.R.C.S., of a son.

SMITH.—On July 27th, at Walden House, Watford, the wife of G. Francis Smith, M.R.C.S. Eng., L.R.C.P. Lond., of a daughter.

MARRIAGES.

BALME—CARR.—On July 8th, at Holy Trinity Cathedral, Shanghai, Harold Balme, F.R.C.S. Eng., L.R.C.P., to Hilda Elizabeth, second daughter of the late T. W. Carr, Esq., Carlisle.

BOYD—FOX.—On July 16th, at St. Mary's, Wimbledon, by the Right Rev. Bishop Taylor-Smith, C.V.O., Sidney Boyd, M.S., F.R.C.S., of 10, Chandos-street, Cavendish-square, W., to Violet Evangeline, daughter of Mr. and Mrs. Henry Fox, of Moorfoot, Putney.

GRAHAM—COCHRANE.—On July 22nd, at St Luke's Church, Chelsea, London, S.W., Alexander Graham, M.B., Ch.B., B.Sc., of Forest Gate, London, E., to Margaret Jewel Small, only daughter of Mrs. James Cochrane, Coupar-Angus, N.B.

TA BOIS—TYDEMAN.—On the 21st July, at St. Peter's, Brockley, S.E., by the Rev. C. H. Grundy, M.A., Vicar, Alfred C. Ta Bois, M.D., to Mary Tydeman.

DEATHS.

MARTIN.—On Friday, July 22nd, Stephen Luther Martin, L.S.A., of 55, Oxford-terrace, Hyde Park, W.

SIMSON.—On July 22nd, at Nowshera, India, of cholera, Captain E. D. Simson, I.M.S.

N.B.—A fee of 5s. is charged for the Insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

SCURRILITY.

A CORRESPONDENT who contributes "South-Eastern Notes" to *The Fruit Grower, Fruiterer, Florist, and Market Gardener*, referring to our observations on the unwashed strawberry in an annotation in THE LANCET of July 2nd, writes in the issue of that journal of July 14th, 1910: "THE LANCET has been having a sling at strawberries quite in its own way." He then proceeds straightway to justify this "sling" by adding, "I wish the medical men would exert themselves and get an Act passed to make it a penal offence to use manure as litter under the strawberry. The filthy practice is gradually dying out, but is still practised in some private and semi-private places, also in a few less modern market gardens ..... If the manure is put down early enough to wash away clean then the weeds, oats, &c., will grow sufficiently large to smother the crop; if it is put down late, in the natural course of things the fruit must become contaminated." In spite of this complete endorsement of our view of the case, "the medical profession," we learn elsewhere in the same number of this journal, "is ever ready to make silly proposals as to the washing of soft fruits before consumption." We should not have referred to this amusing inconsistency of statement had it not been for the fact that the writer of the "South-Eastern Notes," in expounding his subject further on, goes out of his way to publish a foolish charge against the medical profession, which he knows, or his editor should know, perfectly well cannot be sustained. "The silence of the medical profession on this vital matter (the question of milk and vegetables produced on the sewage farm) can, to my mind," he writes, "only have one explanation—the sewage-grown produce as well as the stinking sewage farm itself brings grist to their mill. It must be so, or we should hear more from them on the subject, I am sure." A correspondent who can make a scurrilous statement of this kind should be firmly discouraged by a fair editor.

"DEATH IN THE POT" OR ON THE GRILL.

"DIET Reform on the Continent" (writes our Italian Correspondent) has a significance and a relevance for the sojourner South of the Alps not contemplated in the interesting communication under that heading in THE LANCET of July 9th (pp. 139–140). For, in his case, it is not a question of the claims of an exclusively vegetable as against an exclusively animal menu, or even of the proportions in which the one or the other of these constituents ought in a mixed diet to preponderate, but the far more vital and elementary one as to the soundness of the edibles put before him—of their fitness, indeed, for human consumption. A tragic instance in point is reported from that much-frequented resort, Lake Como, where on July 15th, at the attractive township of Onno, 30 individuals were placed in imminent danger of life, and one, a little girl of eight, succumbed within a few hours through having partaken, more or less heartily, of calf's flesh. The animal it seems, according to the official statement, had some eight days after birth died a natural death, and its proprietor, in contravention of the law, instead of burying, after destroying, it, had exposed it for sale. Distributed in portions through the community everyone who ate of it was stricken within a few hours with what the report calls "gravissimi disturbi gastro-enterici," presenting all the symptoms of acute poisoning. The little girl referred to was the first victim—no medical treatment proving of any avail; while 10 of the other 30 were placed in a critical condition. The calf had not been depleted of its blood, while all the viscera had been left in its interior! Legal proceedings, of course, have been taken against the inculpated proprietor, the result of which we have yet to learn. Meanwhile, the consternation of the townsfolk of Onno has spread all over the province, conveying a loud warning, particularly to the unsuspecting foreigner, as to the danger he incurs in quarters where he may happen to have strayed from the beaten track. "Never in those places," said an English artist whose enthusiasm for landscape led him far afield, "ask for any article of food not used by the natives themselves. The innkeeper, more or less 'perfidus,' is apt to promise anything you order, and to put before you a substitute anything but safe." Another point. In these semi-civilised places anything that savours of modernity is prized as "up-to-date," not to say "chic," and for this reason the innkeeper will give the guest tinned vegetables or tinned meats under the impression that he is humouring metropolitan requirements, too fastidious to be satisfied with the fresh products of the kitchen garden or the dairy farm, or the shambles! The date at which these edibles have been (more or less) "hermetically" immured in their metallic prison is often of remote antiquity, leaving time for any nutrient value they originally possessed to disappear and to be replaced by some product of decomposition the reverse of "nutrient," if not absolutely dangerous. "Diet reform on the Continent," it will

thus be seen, is more than a question between "vegetables" and "butcher's meat," and the traveller will do well to be on his guard, particularly in countries where hygienic law is too recent to be thorough, and where, if adequately framed, it is apt to be perfunctorily enforced.

THE LONDON MILK-SUPPLY.

DURING the year ended June 30th, 1910, 2432 samples were taken by London County Council officials of milk coming into the metropolis, and 2247 of these were examined by the Lister Institute. The number found to be tuberculous was 199, or 8·9 per cent.; 10,723 cows were examined on 419 farms scattered over the home, midland, and western counties, and 142 of the cows, or 1·3 per cent., were found to have tuberculous udders. In the previous year 1217 samples of milk were enamined, 157, or 12·9 per cent., were found to be tuberculous, and 282 cows out of 10,103 inspected—2·6 per cent.—were found to have tuberculous udders. The cost this year of the administration of Part IV. of the London County Council (General Powers) Act, 1907, under which these investigations were made, was £1896, as compared with £990 in the previous year.

THE RÔLE OF THE SHEET.

IN connexion with the International Congress of School Hygiene which was held in London in 1907 we referred to an invention designed by Mr. D. H. Shuttleworth Brown of Wimbledon for the purpose of preventing soiled sheets coming into contact with the other articles of bedding, and we again call attention to the matter because anything which tends to inculcate habits of cleanliness cannot too often be reiterated. Many people have the idea that the purpose of sheets is to keep the occupant of the bed warm, but obviously their real use is to insulate by a washable material the sleeper from the mattress and blankets. Therefore the same side of the sheet should always be in apposition to the body, and we note that at a recent meeting of Manchester sheeting manufacturers a resolution was carried unanimously declaring that a bed-sheet should be used for the purpose of insulating the sleeper. In order to ensure that the person making the bed may be able to distinguish the two sides of a sheet, and also that a traveller at a hotel, for instance, may be able to see at a glance whether his bed has been properly made in this respect, Mr. Brown runs a tuck across the top and bottom sheets in such positions that when the top sheet is turned back over the counterpane the tucks are quite visible. Bed-ticking is seldom cleaned, and blankets, even by the most careful people, are probably washed not more than once a year, so that unless the "human" side of the sheet is kept from contact with the parts of the bedding less often, or never, washed, there is certainly a risk to health. Especially is this the case in public institutions where sleeping accommodation is provided.

THE HOLT SANATORIUM, NORFOLK.

ONE of the few sanatoriums in the country for consumptive children, the Holt institution in Norfolk, which was temporarily constructed to accommodate 20 children, has now been in existence for four years, and has done excellent work. During the last six months of 1909 there were 107 applications for admission, but for want of accommodation only 18 cases could be received. This state of things is very regrettable when it is considered that the only means of stamping out this terrible disease is to deal promptly with cases in their early stages. It has been decided to erect permanent buildings at Holt, and with this object in view the council of King Edward's Hospital Fund has promised a grant of £500. The cost of erecting a permanent building to accommodate 40 children will be £6000, and a special appeal for this sum has now been issued by the committee of management of the institution, it being a stipulation of King Edward's Hospital Fund that the grant shall be claimed within two years. Any appeal with the object of helping to free the country from tuberculosis, a disease which it is estimated claims 60,000 lives annually, should meet with a ready response; but when, as in the present case, the appeal is also made on behalf of the little child, the amount of money asked for should be at once forthcoming. Donations and subscriptions may be paid to the Sanatorium Account at Messrs. Hoare's Bank, 37, Fleet-street, E.C., or may be sent to the honorary secretary, Mr. T. H. Wyatt, M.V.O., at the London offices, 68, Denison House, Vauxhall Bridge-road, S.W., by whom all particulars will be gladly supplied.

THE BAT AND BALL CLUB.

Princess Ludwig of Löwenstein-Wertheim distributed the toys to 1000 destitute boys and girls at the annual summer entertainment of *The Ladies' Field* Bat and Ball Club on July 26th. The fête was at the headquarters of the London Scottish, Buckingham Gate, by kind permission of the commanding officer, and proved a great success. The little guests were drawn from the Ragged School Union, the Church Army, Chelsea, the Waifs and Strays, Children's Happy Evening Association, Brompton, Invalid Children's Aid Society and Dr. Barnardo's Homes, these last being newly admitted children from off the streets. On arriving they were welcomed by the martial strains of the pipers and buglers from Dr. Barnardo's, and then sat down to a substantial repast. Afterwards "Punch and Judy" gave huge delight to the happy youngsters. The stacks of cricket bats and balls, battledores and shuttlecocks, racquets, tops, and dolls rapidly diminished as the boys and girls filed by and received their presents. The Bat and Ball Club was, we are informed, inaugurated some 18 months ago to interest the children of the better classes in the children of the poor, and this is the fourth entertainment the club has given since its inception. The club is justifying its existence, and we are happy to bring it to the notice of our readers, for it has its distinctly sanitary side. To bring joy to little children, and to provide them with an incentive to orderly recreation, is truly to work in the cause of public health.

AN EYE DIAGNOSIS CHART.

Dr. Chas. A. Adair Dighton has sent us a specimen of an eye diagnosis chart which has been drawn up for him by the Medical Supply Association (Gray's Inn-road, London). The object of the chart is to combine on one piece of paper, perforated for easy filing and subsequent reference, the full history of the case, the ophthalmoscopic phenomena, and details of treatment. Columns are also ruled in which a note of the fees paid can be kept. We can understand that such charts may be of distinct value in consultant work.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

A DIARY OF CONGRESSES.

CONGRESSES are now getting so numerous that we have thought that a diary like the one printed below might be of service to our readers. With that idea we shall repeat it occasionally, with any necessary additions or subtractions. The following Congresses, Conferences, and Exhibitions are announced for 1910:—

August 1st–7th (Brussels and Liège).—Congress of French-speaking Psychiatrists and Neurologists.
,, 2nd–7th (Paris).—Third International Congress on School Hygiene.
,, 4th–10th (Brussels).—International Congress of Legal Medicine.
,, 21st–28th (Brussels).—International Home Education Congress.
August 31st (Sheffield).—British Association for the Advancement of Science.
Sept. 5th–10th (Brighton).—Congress of the Royal Sanitary Institute.
,, 10th–14th (Brussels).—Second International Congress on Occupational Diseases.
,, 13th–15th (Brussels).—International Congress on Radiology and Electricity.
,, 18th–24th (Königsberg).—Eighty-second Congress of German Scientists and Medical Men.
,, 22nd–27th (Toulouse).—Sixth French Congress of Gynæcology, Obstetrics, and Pædiatrics.
,, 22nd–28th (St. Petersburg).—Fifth International Congress of Obstetrics and Gynæcology.
,, 27th–30th (Vienna).—Eighth International Physiological Congress.
Oct. 1st–5th (Paris).—Second International Conference for the Study of Cancer.
,, 3rd–7th (London).—Sixth London Medical Exhibition.
,, 3rd–7th (Berlin).—International Congress on the Care of the Insane.
,, 4th–8th (Brussels).—Second International Congress of Alimentary Hygiene.
,, 13th–15th (Paris).—Eleventh French Congress of Medicine.
,, 16th–22nd (Barcelona).—First International Spanish Congress of Tuberculosis.

In 1911:—
May–October (Dresden).—International Hygiene Exhibition.
August or September (Berlin).—Third International Laryngo-Rhinological Congress.
September (Brussels).—Exhibition of Fractures.
October (Cologne).—International Congress of Criminal Anthropology.

In 1912:—
September (Washington, D.C.).—Fifteenth International Congress of Hygiene and Demography.

In 1913 the only fixture so far is in London, where the Seventeenth International Congress of Medicine will take place.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, July 27th, 1910.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rain fall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
July 21	29·61	S.W.	0·29	109	71	60	61	62	Cloudy
,, 22	29·63	S.W.	0·08	103	66	58	58	59	Cloudy
,, 23	29·77	N.W.	0·07	110	67	57	57	61	Cloudy
,, 24	30·02	S.W.	...	89	61	52	55	57	Cloudy
,, 25	29·46	S.W.	0·11	123	67	53	57	59	Raining
,, 26	29·67	W.	0·11	100	62	53	52	54	Raining
,, 27	29·99	S.W.	...	119	65	53	55	60	Fine

Medical Diary for the ensuing Week.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye.

TUESDAY.—10 A.M., Dr. Moullin: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin.

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Mr. B. Harman: Diseases of the Eye. 2.30 P.M., Dr. Robinson: Diseases of Women.

THURSDAY.—2 P.M., Medical and Surgical Clinics. X Rays. Operations. Mr. Dunn: Diseases of the Eye.

FRIDAY.—10 A.M., Dr. Moullin: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin.

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Diseases of the Eye. 2 P.M., Medical and Surgical Clinics. X Rays. Operations.

HOSPITAL FOR SICK CHILDREN (UNIVERSITY OF LONDON), Great Ormond-street, W.C.

TUESDAY.—5 P.M., Mr. H. G. T. Fairbank: Deformities, illustrated by cases, specimens, skiagrams, and sketches. (Lecture VII.). (Post-graduate Course).

THURSDAY.—5 P.M., Mr. H. G. T. Fairbank: Deformities, illustrated by cases, specimens, skiagrams, and sketches. (Lecture VIII.). (Post-graduate Course).

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (1st).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.), Central London Throat and Ear (Minor 9 A.M., Major 2 P.M.),

TUESDAY (2nd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M., Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.),

WEDNESDAY (3rd).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Royal Orthopædic (3 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

THURSDAY (4th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Orthopædic (9 A.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M.), Tottenham (Gynæcological, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

FRIDAY (5th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

SATURDAY (6th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M.), West London (2.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

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Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Manager."*

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MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

The Index and Title-page to Vol. I. of 1910, which was completed with the issue of June 25th, were given in THE LANCET of July 2nd.

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